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NORTHWEST MEDICINE

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VOLUME VII.
JANUARY TO JULY, 1909

PUBLISHED BY
Washington Medical Library Association,
SEATTLE, WASH.

NORTHWEST MEDICINE

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NORTHWEST MEDICINE

THE JOURNAL OF THE
WASHINGTON STATE MEDICAL ASSOCIATION.

January, 1909

ORIGINAL CONTRIBUTIONS

THE INTRACRANIAL COMPLICATIONS OF MASTOID DISEASE.*

By William House, M. D.

PORTLAND, ORE.

The mastoid, surgically considered, bears the same relation to the brain cavity as does the vermiform appendix to the abdominal cavity. Its structure is such that, once infection has occurred, it remains, either active or latent, never ceasing to menace surrounding structures, until recovery, spontaneous or with surgical aid, takes place. Spontaneous recovery is not as frequent as one might wish, because the honeycomb-like bone possesses inadequate recuperative powers, and when irritated tends to perpetuate, prolong and conceal, rather than heal disease. Secondary involvement of the brain and its membranes is common. Recognition is not difficult in most cases, though the literature of the subject would indicate that it is far from easy. It is direct evolvement by continuity or contiguity of tissue, and is readily explained by the surgical anatomy of the mastoid region.

Anatomic Scheme.

Regard the auditory canal as a crooked tube passing through cancellous bone to terminate in a blind end. About one-sixth inch from the inner end this tube is divided by the drum membrane into two parts, the external auditory canal and the tympanum. Into the typanum the Eustachian canal opens, conveying infection from the throat. Above the tympanum is the attic, which is an irregular cavity bearing the same relation to the tympanum as does the attic of a one-story house to the room below. Running backward and inward from the attic is a canal of varying size, usually about the diameter of a slate pencil and one-half inch long. This is the mastoid antrum. All three cavities communicate by large openings and are practically continuous. All are lined with vascular mucuous secreting membrane. Below and surrounding them is the mastoid structure.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

The attic and the antrum are separated from the cranial cavity by thin bone, which forms the roof or tegmen. On the cranial side this bone is covered with the dura, which alone forms the intervening layer between bone and brain.

The sizes and the relations of the tympanum, attic, and antrum vary in different bones. The direction of the cavity of the antrum also varies, and it may end either under the middle or against the side of the posterior fossa; while the roof may be but paper thick or may have between it and the tympanum a layer of cells as much as one-half inch in thickness. These differences in structure account for great differences in the susceptibility of individual patients to rupture and intracranial complications.

Genesis of Cranial Complications.

As long as the Eustachian tube is patulous, secretion from the middle ear escapes into the throat. When the tube proves inadequate the secretion passes into the attic and from there into the antrum, thence downward into the mastoid cells. Usually the ear drum ruptures and part of the secretion escapes through the opening. The irritated cells secrete profusely, however, and the bone is bathed in purulent or muco-purulent discharge. The mastoid cells granulate freely, and pressure from within finds expression not only in external swellings, but in swelling within, producing virtually an internal periostitis. This is the first step toward dural involvement.

As the disease advances the inflamed and eroded bone ruptures at the thinnest part. We have no interest in those cases in which rupture is external. But, if rupture take place internally, exudate appears between the bone and the dura, and the extra-dural abscess so formed increases the cranial contents and produces the symptoms of intracranial pressure.

Erosion continues. The dura bursts. The opening may be but pin-hole in size, yet infection passes through. If there be no limiting adhesions a widespread meningitis follows. But in many instances, as a result of natural points of attachment or of disease adhesions, the dural opening is continuous and occurs simultaneously with that through the bone. Further, the brain may be adherent on the inside to the bone, and infection may pass directly into its substance without intervening extra-dural abscess. These conditions are modified and influenced by the virulence of the infection and the point at which rupture occurs.

Classification.

From the preceding it will be seen that the intracranial complications of mastoiditis are as follows, and I assume the order of frequency of the various forms. Sinus thrombosis is not here considered, as it appears to belong within the domain of the otologist, producing symptoms which he can interpret better than the neurologist:

I. Extra-dural Irritation.
II. Extra-dural Abscess.
III. Meningitis.
IV. Abscess of Brain { Cerebral.
Cerebellar.

Depending upon the location of the bone caries depends the location of the ultimate trouble. Perforation is most likely to occur at the thinnest part of the bone. Since this is the roof of the attic—the tegmen—, rupture at this point is common. The opening is into the middle fossa of the skull, which is occupied by the temporal lobe of the brain. Abscess is herely relatively common as compared with meningitis, because the weight of the brain bears downward, keeping it in contact with the bone at the point of invasion, and the infection burrows into the brain instead of spreading. Again pus tends to localize in the middle fossa, because the *anterior extremity of the temporal lobe is protected above by a protruding shelf of bone,* against which it lifts if pressure be made from below. And because similar pressure is made mesially against the sphenoid, natural protection tends to occlude the temporal fossa from the rest of the cranial cavity, permitting adhesions and walling off of the infected area.

Sometimes polypi are found in the middle ear. The base of these communicates with the floor of the middle fossa and, in two of my own cases, as well as in a number of reported in the literature, removal of polypi was followed by rapid development of signs of brain abscess. This is explainable on the theory that brain symptoms were already present and caused the patients to consult their surgeons, who removed the apparent cause of the disturbance simultaneous with the development of the brain symptoms; or that infection followed the bleeding polyp stump into the brain and a highly acute abscess resulted.

After the roof of the attic, the next most frequent point of rupture is the roof or end of the antrum. If through the roof, the resulting abscess is into the temporal lobe, just as in cases of rupture through the roof of the attic. But if through the end of the antrum, the opening is usually into the posterior fossa, with basilar meningitis, sinus thrombosis, or cerebellar abscess as the result.

Finally, rupture may occur at any place on the inside of the mastoid, the result depending on the level at which the pus breaks into the cranial cavity.

SYMPTOMS.

It is apparent that, if the dura is involved on the outer side only relief and cure will follow early interference, simply by opening into the mastoid down to the dura and draining. But if the disease has invaded the dura, the danger is far greater, and to act wisely it is necessary to determine:

First. Whether it is a widespread meningitis, which offers little hope of recovery, or

Second. If the disease is localized (abscess) and whether in the cerebrum or the cerebellum.

Having evidence of middle ear disease, acute or chronic, as a basis, special symptoms arise, leading to the suspicion of brain involvement. If *limited to the dura,* there will be headache; vertigo, usually slight; sometimes nausea; and some tenderness. If on the left side the special senses may be involved, with word deafness or word blindness. In extensive irritation there may be, as in a case seen with Dr. Coghlan, progressive limitation of the vocabulary. This patient also exhibited interesting psychic symptoms, feeling at times that she was dissociated from her soul, which seemed to have the power of hovering over and looking down upon her. Operation in June disclosed a much thickened dura, and the vocabulary has improved, and the psychic disturbance disappeared since recovery from the wound.

Dural irritation at all times causes loss of the inhibitory control, and the patellar reflexes are therefore much increased. The pupil on the same side is slower than its fellow, and possibly a trifle larger.

If there be *extra-dural fluid,* pressure symptoms are added. Signs of irritation are magnified. The knee jerks increase, and begin to show evidences of localization, being more exaggerated on one side. The pupil on the same side reacts slowly or is enlarged. The vertigo increases, and head tension or a sensation of bursting is evident. Septic symptoms are increased, and more important than all else, *slow pulse* and sighing, or slow, or irregular respiration become manifest.

Let the trouble *invade the dura.* If it results, through the process described, in *brain abscess,* the pulse rate diminishes even as low as (in one case) 26 per minute. All the preceding symptoms increase. If the abscess be acute, the patient takes on a pinched and anxious appearance. The mental faculties are blunted. The knee jerk on one side now shows enormous increase over its fellow. Vomiting may ensue. Sometimes there is optic neuritis or atrophy, but they are of importance only when found as confirmatory evidence and their absence should not militate against diagnosis.

Weakness of the muscles of the opposite side may be detected. If the hand grips do not reveal this the difference may be detected by the use of the dynamometer, remembering that there is a normal difference of about 10 per cent. in healthy persons.

If the abscess be in the cerebrum, the knee jerk will be greater on the opposite side.

If the abscess be in the *cerebellum,* I believe the knee jerk will be the greater on the same side, except when the amount of pus is enormous. Certainly in one of my cases, at the time semi-conscious, this was the case, and led to a correct diagnosis, verified by autopsy. I have not seen this observation recorded elsewhere, but believe it reliable.

Cerebellar abscess leads to added symptoms, such as intense vertigo, nystagmus, and a sensation as if things were rotating. Finally there occurs in some cases the "cerebellar syndrome or fit," a loud explosive sound in the ears, accompanied by falling or staggering.

Let *meningitis* develop, either from rupture of the abscess or directly. Now the pulse rate increases. The nerves of special sense will be involved progressively. Strabismus is early apparent. Conjugate deviation of the pupils follows. Septic symptoms increase. Respiration becomes faster, then irregular. Swallowing is difficult, the mind is clouded, the heart becomes progressively faster and irregular. Even at this stage it may be possible, by associating symptoms and their sequence, to determine the course of the infection as either over or under the tentorium, that is, as either cerebral or cerebellar. Cheyne-Stokes respiration appears, semi-consciousness gives way to complete unconsciousness, and death closes the scene.

The Pulse.

External dural irritation does not materially affect the pulse except by making it more irritable. Meningitis causes fast pulse. In all other forms of cranial invasion the pulse is slow, usually in the fifties, and this difference is of the utmost importance in leading to a diagnosis.

Any pulse, in the presence of mastoid, or middle ear disease which becomes slower than normal, is a danger signal which must not be disregarded.

Summary of Symptoms.

Summarizing the symptoms of various possible complications are found the following combinations. Evidence of middle ear disease is presupposed in all.

Extra-Rural Irritation.

Headache, not localized, but worse on same side of skull.

Vertigo, usually slight.

Special sense symptoms.
- Word deafness or blindness.
- Partial aphasias.
- Perversions of smell.

Psychic abnormalities.

Pupillary reaction slower on same side, than its fellow.

Knee jerks increased, but equally.

Extra-Dural Abscess.

Increase in subjective symptoms of above.

Appearance of septic symptoms.

Increase in opposite knee jerk.

Pupil on same side slower, and in dim light, larger than its fellow.

Slow pulse. Sighing respiration possible.

Abscess of Cerebrum.

Increase of all signs of extra-dural abscess.

Great headache.

Stupor and hebetude.

Pinched countenance.

Very slow pulse. Usually below 56, dropping as pressure increases as low as 26.

Numbness of muscles of opposite side. Partial hemiplegia.

Impaired deglutition.

Irregular respiration.

Marked difference in knee jerks. Opposite one greater.

Wide pupils. Pupil on same side the larger.

Choked disc or optic neuritis possible.

Cerebellar Abscess.

General signs of pus as in cerebral abscess.

Nystagmus.

Sensation of rotation of objects.

Intense vertigo.

Cerebellar fit.

Prior to death spread of infection may bring on signs of meningitis.

Meiningitis.

Septic symptoms very marked.

Rapid pulse.

Irregular respirations.

Large pupils.

Semi-unconsciousness or unconsciousness.

Rigid neck.

Cranial nerve involvement, producing strabismus, conjugate deviation of orbits, etc.

Difficult deglutition, Cheyne-Stoke's respiration, high fever and death.

Of course few cases are typical. Likewise there are a few adventitious symptoms not enumerated.

DIFFICULTIES.

The greatest difficulties are encountered in patients who have been operated upon, and in whom trouble persists. In such it is difficult to determine whether or no brain symptoms are due to invasion of new tissues, or to remnants of original pathologic conditions existing at the time of operation. Careful study will usually reveal the necessary evidence for or against operation.

Certain patients may suffer from huge abscess of the brain without marked constitutional disturbance. In two of the cases in my series the patients were walking about the streets and although ill were not apparently in serious condition. One had undergone an operation for mastoid disease, the other had been advised to submit to operation and had declined. Each of these patients suddenly lapsed into unconsciousness and promptly died after the mastoid region was opened and approximately one-half pint of pus drained from out the middle fossa. These cases might be compared to the ambulatory forms of typhoid fever.

Difficulties are encountered in the case of patients who have involvement of both ears. Perhaps the discharging ear for which they seek help is the good ear so far as hearing is concerned. They are loth to risk what hearing they have on the operating table. Perhaps they will not go on to complete destruction of the mastoid. In these cases it is a matter of caution and good judgment to say which cases *must* be operated upon, and which may possibly escape.

Another difficulty in diagnosis must be met in such cases as exhibit physiologic or pathologic peculiarities, as in the following case.

By request of Drs. Faulkner Short and J. Arch Stewart, I visited the Good Samaritan Hospital and found them waiting my arrival at the operating table, on which lay an unconscious man. They said that he had been suffering from mastoid symptoms and a polyp had been removed from his ear. His pulse was 56, pupils large and slow. There was no patellar reflex. We believed there was an abscess of the brain or at least a collection of pus inside the cranium. The mastoid was immediately opened, and about three ounces of foul smelling pus, together with much cholesteoma, removed. Next morning the patient was conscious, and with but few setbacks he has since progressed to complete recovery.

I have examined this patient many times and have never been able to get any patellar reflex. Since he is but 23 years of age and has no other signs of cord disease, I assume this to be a case of congenital absence of the knee jerks. And I think this a matter of the greatest importance as a handicap in diagnosis, which might easily have led one astray early in the case history.

TREATMENT.

If there be one condition which cries aloud more than another for surgical aid, it is mastoid disease. When surgeons acquire the habit of regarding abscess of the mastoid as they now regard abscess of the appendix, there will be but few cases of this kind for the neurologist, for early operations will prevent. Every case of mastoid disase which does not recover promptly and which leaves a discharging ear should go to the surgeon. If the signs of dural irritation appear they must haste to him, for cases of dural irritation will become cases of extra-dural abscess. They should not be permitted to reach that stage. Operation up to this time is simple, and will end in recovery. The prognosis rapidly grows worse from now on. Only a very small minority of the cases of meningitis will have even a ghost of a show. In all cases the attempt must be made to get to the place of rupture, and to clean out all of the diseased bone possible. If there be an abscess of the brain it must be reached, opened and thoroughly drained. The pathology of brain abscess must be understood; the fact that the grey matter does not so readily suppurated as the white must be appreciated. These abscesses, therefore, are often large within the lobe of the brain, but communicate with the surface by but a small opening, the socalled stem. Abscesses must be opened thoroughly, wherever they are. Cerebellar abscesses must be incised from below the tentorium, and this presents special difficulties. No case is too hopeless to attempt operating upon and, though life may be shortened in a few instances by the space of a few minutes, this will be compensated for by the occasional recovery of a patient who will seem to rise almost from the dead. Above all else the danger must be recognized early and when so recognized offers the very best opportunity for successful treatment.

In conclusion I wish to thank those surgeons and otologists of Portland and vicinity who have given me opportunity to study with them a considerable number of cases of mastoid disease during the last two years.

313-314 Oregonian Building.

APPENDICITIS IN PREGNANCY.*

By Everett O. Jones, M. D.
SEATTLE, WASH.

The earlier statistics of Sonnenberg, König, Roux and Gebhardt give one the impression that appendicitis occurs more frequently among men than women. This was explained as being the result of a richer blood supply to the appendix in women because of the appendiculo-ovarian ligament, which conducts anastomosing branches from the broad ligement. But Fränkel in a recent work points out that the view is an erroneous one. And Karrenstein, as a result of a more accurate investigation of the statistics of the Charite, of Berlin, concludes that appendicitis does not occur less frequently among women than among men.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

As to the effect of pregnancy on appendicitis, one at first sight would think that the growing, gravid uterus by the side of a diseased appendix would almost certainly aggravate the inflammatory process. But when one looks through the literature he cannot but wonder at the infrequency of reported cases. Recent work has shown that mild grades of inflammatory change in the appendix are of extreme frequency. Krönig, who systematically removed the appendix at every laparotomy, found that in only 50 per cent. was it absolutely normal. Although appendicitis operations are now counted in the tens of thousands, yet the number of cases combined with pregnancy is extremely small. Thus, in 1903 Boije, of Finland, was able to collect from the literature only 76 cases, and in 1906 Stähler had increased the number to 104. Even though one assume that many cases are not reported, or that the milder cases are not diagnosed, still one must conclude that the coincidence of appendicitis and pregnancy is a rare occurrence.

How is this to be explained? Without doubt severe inflammation about the appendix leads to extensive adhesions in the pelvis, which in themselves tend to prevent conception. Even mild cases may lead to so extended a plastic peritonitis as to close permanently the lumina of both tubes. At any rate one must not forget that chronic appendicitis plays a fairly important role in the etiology of sterility.

On the other hand, when pregnancy occurs in a woman subject to catarrhal appendicitis which has not extended beyond the mucosa, the accompanying venous hyperemia of the pelvis and neighboring organs may favorably influence the process, so far as to cause it to disappear. Naturally such a beneficent result can only occur in the mild cases. The conditions are entirely different when we have a collection of pus within or without the appendix.

The increased circulation may so soften the tissues and also raise the pressure within the appendix as to directly favor perforation. A gravid uterus by its progressive growth may so stretch and tear adhesions encapsulating an appendiceal abscess as to lead to general peritonitis. The larger the exudate, the lower it descends into the pelvis, and the more intimately it is connected with the uterus and appendages, the greater is the probability that during pregnancy or labor severe complications will result. Cases in which the appendix is displaced upward or outward or even retroperitoneally are much more favorable, so far as the complications which may be induced by pregnancy are concerned.

The life of a pregnant woman who suffers from suppurative appendicitis is in the greatest danger, not alone during pregnancy, but especially during labor, when the uterus suddenly changes in size and position.

Mention has only been made of the effects of pregnancy on a previously existing appendicitis, but it cannot be denied that primary attacks may and do develop during pregnancy, although from a study of the literature one may justly conclude that this is a comparatively rare condition, and that there is nothing in pregnancy which predisposes to appendicitis.

What is the effect of appendicitis on pregnancy? According to the teachings of Abrahams, McArthur and Fowler, abortion was the inevitable result. Fowler says, "according to my experience appendicitis developing during pregnancy without exception produces abortion, with a fatal termination." McArthur says, "since, whether we operate or not, there is very little hope of saving the life of the child." This view, however, is entirely too pessimistic. A large number of cases are reported in the literature and two of my three cases show that the disease does not necessarily produce abortion.

Whether abortion follows or not depends entirely on the form of the appendicitis. Where the inflammation is confined to the mucosa, or at least does not extend beyond the immediate area of the appendix, or when the appendix is not too long and does not hang over into the true pelvis, the chances are in favor of the pregnancy not being interrupted. Even in suppurative cases, when the abscess is not large and is well walled off, particularly if it be situated extraperitonealy or to the outer side of the cecum, abortion may not result. Boije's statistics, collected in 1903, give 64 cases, of which 36 resulted in abortion and in 28 pregnancy was not interrupted. Stähler's report, in 1906, gives 104 cases, of which 40 went to term and 64 ended in abortion.

The question arises, how does an attack of appendicitis lead to the interruption of pregnancy? Three separate causes are active. First, the adhesions which form as the result of chronic appendicitis may extend to and cover the uterus and appendages and in a purely mechanical way hinder the growth of the pregnant uterus and so lead to abortion. There is no doubt but that, in a considerable proportion of the cases of so-called habitual abortion, perimetritic adhesions of appendiceal origin lie at the bottom of the condition.

Second, the extension by continuity of the suppurative process from the appendix to the pelvic organs. It may spread along the peritoneum, through the lymph vessels of the retroperitoneal space and broad ligaments, and even through the abdominal end of the right tube, which sometimes forms a part of the abscess wall, or may even lie within the cavity bathed in pus, as occurred in one of my cases. In these latter cases the infection penetrates the more easily to the uterine mucosa, and a normal course of pregnancy is out of the question. After abortion a severe infection of the genital tract and general septicemia usually develops. The origin of the infection is naturally from the appendix, and not from the uterine cavity, although the severely diseased mucosa offers a favorable culture bed for the further propagation of the infection. The abortion here is not the cause, but the result of the infection. My third case illustrates this condition.

The third cause of abortion consists in the development of metastatic abscesses in the placenta and wall of the uterus through the veins of the right broad ligament. These pus foci disturb the circulation of the placenta and lead to abortion. Pinard has been able to isolate the bacillus coli in pure culture from the umbilical vessels of a child born during an attack of suppurative appendicitis. When a child dies in utero as the result of such an infection, it becomes a foreign body and incites the uterus to contraction.

The *diagnosis* of appendicitis in the early months of pregnancy presents no peculiar difficulties, but as the uterus increases in size palpation of the cecum becomes more and more difficult. Often the recommendation of Fränkel to examine the appendix region with the patient lying on the left side will be found extremely useful.

An attack of appendicitis appearing toward the end of pregnancy may present extreme difficulties in diagnosis. Examination of the cadavers of pregnant women by frozen sections shows that, as the uterus increases in size, the two folds of the uterine ligaments are gradually separated. The vessels of the broad ligements and especially the ovarian vessels become markedly thickened.

These two factors, the spreading of the peritoneal folds and the thickening of the vessels, produce an upward and inward dislocation of the cecum and appendix. The ascending colon assumes almost a horizontal direction, the cecum approaches the anterior abdominal wall and, therefore, the appendix lies more superficial. If an appendix so dislocated becomes acutely inflamed, and an abscess forms about it, the location will be uncommonly high, in the region of the umbilicus, or even under the liver. In such a position it may be easily confused with an acute empyema of the gallbladder. The referring of the pain to the right shoulder, and the fact that the impaired resonance of the exudate merges directly into the liver dullness without an area of tympany between will usually serve to distinguish an infected gallbladder. During the puerperium appendicitis is most often confused with an infection arising from the uterus or right tube.

The *prognosis* of appendicitis arising during pregnancy is always a very grave one. The statistics collected by Boije show that the later in pregnancy the attack appears the graver the prognosis. Stähler's collection shows that, of 58 pregnant women operated on for appendicitis, 20 or 35 per cent. died; of 46 cases not operated on 17 or 37 per cent. died.

In the face of such a frightful mortality decision in the question of treatment must always be a matter of serious responsibility. If ever the dictum to "operate as soon as one is sure of the diagnosis" is true, it is in this condition. The danger of infection of the placenta and walls of the uterus, and of general peritonitis is so great, that every effort should be made to operate before suppuration or abscess formation outside of the appendix has developed.

In suppurative cases the best results will be attained by a short operation, thorough drainage, removal of the appendix when it can be accomplished without unduly prolonging the operation, and continuous saline irrigation by rectum. After abortion has occurred, as it will in a large proportion of these cases irrespective of the treatment followed, the rectal saline irrigation should be continued and, if symptoms of general peritonitis appear, ice be applied to the abdomen, food and drink withheld from the stomach, and lavage used if vomiting be present.

I am very doubtful of the value of multiple drainage of the flanks and pelvis. Our operative interference should be as simple and rapid as possible, and should aim merely to relieve the tension and start the flow of pus toward the surface.

The ideal treatment is preventive and to this end every pregnant woman who has catarrhal or recurrent appendicitis should be given the benefit of an interval operation. The most favorable time is the third or fourth month, as the uterus is not so large as to obstruct the operation, and the abdominal scar has time enough to beome firm before labor sets in.

The advice of McArthur to artificially induce abortion in every case before operating for the appendicitis is entirely wrong. Not every case of suppurative appendicitis leads to abortion, and even if it did the change in size and position of the uterus and the consequent tearing loose of adhesions would more certainly lead to general peritonitis than after operation, when tension is relieved and drainage established.

In conclusion, I wish to report three cases which have come under my observation. One was a subacute recurrent case which was operated upon during the interval, in the third month of pregnancy, followed by recovery and labor at full term. The second was an acute suppurative case with well walled abscesses, occurring during the fourth month of pregnancy. Operation followed by recovery. A healthy child was born at term. The third was an acute, perforative, gangrenous appendicitis in a young woman seven months pregnant. Operation followed by premature labor, birth of a dead child, and death by general peritonitis.

Case 1. Mrs. D. J., of Murray, Utah, 33 years old. Married ten years. Has had three children. February 22, 1903, entered hospital in third month of pregnancy. During the previous two months had suffered from three fairly well marked attacks of appendicitis, the last one two weeks before admission. The day following a thickened, indurated appendix, surrounded by light adhesions, was removed. The wound healed primarily and the pregnancy advanced to term. At no time during its subsequent course was there any pain or other disagreeable symptoms in the region of the cecum.

Case 2. Mrs. M. R., of Salt Lake City, Utah, 23 years old. Four months pregnant. Entered hospital April 5, 1905. Had always enjoyed good health, had never suffered from constipation or abdominal pains. Two days before admission she was suddenly taken sick with vomiting and abdominal pain. She had the appearance of being seriously ill, slight jaundice, dry tongue, temperature 100°, pulse 110.

Abdomen extremely tender, particularly in the right iliac fossa. Muscular rigidity well marked. Operation on the day of admission. The incision was made through the outer border of the right rectus. A moderate amount of pus was found about the appendix, the peritoneum was injected and covered with flakes of lymph. Light adhesions surrounded the abscess. The appendix, which was gangrenous and perforated over a fecal concretion, was removed and the cavity drained with gauze. The wound discharged pus freely for ten days, and healed very slowly by granulation. At no time was there a sign of threatened abortion. When the patient was discharged the uterus had reached the level of the umbilicus. She was delivered September 30, 1905, of a healthy child. Soon after labor a large ventral hernia developed at the site of operation, for the radical cure of which she was again operated upon January 24, 1906. Numerous firm adhesions were found binding the cecum and the neighboring coils of small intestine to the anterior abdominal wall. These were divided, a portion of omentum resected, the hernial sac removed, and the abdominal wall closed in three layers. Firm union resulted.

Case 3. Mrs. R. N., of Union, Utah, 28 years old. Entered hospital April 3, 1905, in the seventh month of her third pregnancy. Twenty-fours hours before had been suddenly taken sick with vomiting and pain in the right iliac fossa. On admission abdominal tenderness and rigidity were well marked, the features were drawn and blanched, temperature 98°, and pulse 135. A large appendiceal abscess was opened, which was walled off by light adhesions above and below, the body of the pregnant uterus forming the inner wall. The appendix, which was surrounded by adhesions at the bottom of the cavity, was gangrenous and perforated. The right ovary, which was adherent to the appendix, was also gangrenous. The appendix, right tube, and ovary were removed. Gauze packing and a rubber drainage, tube were left in the wound. During the following days the pulse sank to 85 and the patient appeared to be improving. On April 6 labor came on and a dead child was delivered. Immediately after the pulse returned to 135 and the temperature rose to 101°, great distention appeared, and the patient died the following day of peritonitis.

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THE EMMANUEL MOVEMENT AND ITS RELATION TO MEDICINE.

By Frank Hinman, M. D.

SPOKANE, WASH.

Physicians have long practised psychotherapy but it is significant of the advance of man, with the recent development and revival of this branch of therapeutics, that the ministry should have entered this field of the healing art. It is distinctly middle ground and the rightful field as much of one as the other.

Medicine had its beginning in religion. Primitive man was surrounded in a realm of wonder. To account for these mysteries he peopled heaven and earth with divinities who were responsible alike for the good and the evil, and for ages man regarded disease as a manifestation of these powers and the cure of disease as a propitiation by prayer or sacrifice. Both in its origin and in its cure disease was looked upon as supernatural.

Systems of so-called divine healing have existed in all civilizations. The most renowned, as worthy the ideals of the great Greek and Roman peoples, is that of Aesculapius, the son of Apollo. To this "God of Healing" were built beautitful temples after the superb method of the Greek art, at Cos, Cnidos, Epidaurus, Rhodes and other Greek cities. Real cures were often effected by their elaborate ritual through their simple faith which was the all important feature in the treatment, though they sometimes used massage, baths, diet and gymnastic exercises. At first they were sacred sanatoria but became degraded with the advent of philosophy, reason and cold Pyrrhinism into hot beds of quackery and deception. The cult of Aesculapius was short lived. But mankind is as credulous today as in this pre-Hippocratic era.

Christian Science is having its run on credulity. This cannot but be short. Like the school of Aesculapius of old; like the virtues of tar water; like the reputed efficacy of Perkin's metallic tractors, or even in this our own century, or the "royal touch" in the "King's evil" as told in Macauley's history, when William III. refused to exercise the power superstitiously believed in by his subjects, though his predecessor Charles II. had touched near a hundred thousand persons; like the miracles of Hohenlohe; the therapeutic marvels of mesmerism; like the spiritual cures of Dr. Newton, or the wonders worked by the Zouave Jacob; like these and the other supernatural schemes, Christian Science, as believed in today, will soon wane and decay. And then we will get something else, remembering with Osler, "That credulity is of the very essence of human nature. Science has done much in revolutionizing mankind, but man remains the same credulous creature as he has been in all ages. Tar-water, Perkin's tractors, laying on of hands, Christian Science, Lourdes and other miracle working shrines illustrate the deep, intense credulity from which science has not yet freed mankind, and is not likely to do so. It is an aspect of human nature which we must accept and sometimes utilize."

Credulity, faith or confident expectation, as furthered by suggestion, is a state of mind most potent in any form of treatment of disease. Without the confidence of his patient the physician is heavily handicapped. With perfect trust the manacles fall off.

Physicians have too long neglected this important aid in therapy, relegating it to the use and abuse of quacks. Today psychotherapy is a recognized and a powerful therapeutic agent. Dr. Barker, of Johns Hopkins, is its ardent advocate. Through his efforts the Phipp's psychiatric clinic has been established. And he never lets go by in the ward rounds an opportunity to impress its significance upon the minds of his students. Dr. Wier Mitchell has long used it and every physician realizes its potency.

Its successful application is limited. This has been the trouble in the past. Quacks, charlatans and religious sects have failed to recognize its practical limitations. No true organic lesion, such as cancer or gastric ulcer or brain tumor, was ever cured by the expectation of benefit. Such supposed instances are cases of faulty diagnosis or merely of a belief in benefit which can only be temporary. Any system of treatment once puffed into notoriety will attract to it a multitude of sufferers, among whom there will be several who will be permanently relieved, and others temporarily benefited. But these cures are not cases of organic trouble but of so-called diseases of the imagination, cures effected at the seat of the trouble; mind engendered, they are mind cured. As Milton wrote, "The mind is its own place and in itself can make a heaven of hell, a hell of heaven."

The victims of these neuroses are to be pitied; but not to their faces, for that only magnifies things. To them their maladies are not imaginary but are of the cruelest reality. Their misery is enhanced by a weakened, shattered nervous system and often sharpened by a pitiful moral and spiritual lassitude. They have reached a state of expectant attention on their suffering and are continually directing their consciousness to the seat of the supposed trouble until it becomes a fixed idea. Psychotherapy, by destroying this idea, cures the disease.

The list of these maladies is almost legion. Their diagnosis is sometimes difficult, but usually is self-evident. They lack the regularity in symptoms and signs of true organic disease. They belong to the pseudo class—to the table of shams. Taking the stomach alone and on its motor side only, we have ten recognized neuroses, such as functional errors in the secretion of the gastric juice, nervous eructations of gas and nervous vomiting, spasm of the muscles at the pylorus or the cardia or a loss of muscle tone and a consequent insufficiency at either of these stomach openings.

The following is a typical history of such a case: A young woman six months ago complained of severe pains in the stomach, paroxysms of vomiting, loss of weight and a belief that she was suffering with gastric ulcer. These symptoms had existed for several years. After being sent to the hospital, having had her stomach washed out, a test-meal administered and withdrawn with the stomach pump and then analyzed, and after being assured that there was absolutely nothing the matter with her, she was discharged, pronounced cured. I saw her again two weeks ago. She had gained thirty pounds in weight and had never had a recurrence of her pains or vomiting. Christian Science, Perkin's tractors or even the touch of King Charles would have done the same, provided she had believed in their efficacy, and yet previous to the use of the stomach tube her suffering had been real and her life miserable.

And so it is with a host of other neuroses. The functional paralyses, certain forms of epilepsy, headache, neuralgia, rheumatism, spasms, neurasthenia, that American disease, hysteria, traumatic and occupational simulations, and many respiratory, gastric, visual, vocal, auditory and cardiac troubles are capable of relief by the method of suggestion.

While these neuroses are of most importance from a physician's standpoint and entail the greatest amount of suffering, they are not the only conditions of our environment in which the state of mental expectation can produce results. Nothing is more credulous than a child, no one more open to suggestion. It is, therefore, of importance that the suggestions held out to children shall be of the right sort, shall carry moral welfare. Most of the evils of after life begin in infancy with the establishment of faulty habits and through bad education. Mental expectation itself, which we are discussing, may lead to mental and physical ills if directed along the wrong road.

Take the instance of the "Obeah practices" among the negroes of the West Indes, as an example of what suggestion will do. Certain old men and women, reputed to possess the injurious power, by pronouncing "Obi" over the victims would cause them to slowly pine away and often die. And so far-reaching did the influence of this fixed belief become that the practice had to be suppressed by legislation.

In addition to the benefit of wise suggestion for the moral character and mental stamina of the child, there are certain nervous troubles of children amenable to this form of therapy. The nervous tics and habit spasms, stuttering and eneuresis are best treated and often only cured by the method of suggestion.

The relation of religion, or moral and spiritual strength, to these conditions is intimate. Science and morality are brother and sister, the children of philosophy and religion, and here science and religion can co-operate for, as Osler says, "Biology touches the problems of life on every side.

The Emmanuel movement can do a great deal of good. There is no encroachment on the duties of the medical profession. If wisely executed and carefully controlled, its purpose cannot but realize excellent results. Like everything of the kind it will have to contend with quackery and, if widely and loosely practised, will tend to degenerate into charlatanism and deceit itself. Holding the confidence of its patrons, limited to the functional disorders and such other uses as outlined, and practised by men of wisdom and common sense, its application will be epoch making and of infinite significance in the evolution of man. It cannot help but meet with the hearty co-operation of the enlightened members of the medical profession, remembering with Helmholz, that we are all striving after "that truth which has never been deceived, that complete truth which carries with it the antidote against the bane and danger which travel in the train of half-knowledge."

THE WASHINGTON ASSOCIATION FOR THE PREVENTION AND RELIEF OF TUBERCULOSIS.

Since the death of its secretary, Dr. W. R. M. Kellogg, who was its originator and chief inspiration, this association has accomplished little of the work for which it was established, awaiting the choice of a successor to Dr. Kellogg. The directors have recently chosen Dr. Elmer E. Heg, of Seattle, as the future secretary of the association. It is unanimously agreed that he is especially fitted for the duties of this office by reason of his long connection with public health matters of the state while serving as secretary of the State Board of Health. His wide acquaintance with men interested in matters of health and sanitation will enable him to direct the thought and attention of many to the warfare being waged against tuberculosis and thus assist the work of this association.

The directors have also elected Dr. E. R. Kelley, of Seattle, assistant secretary. During the latter part of Dr. Kellogg's life he rendered efficient service in forwarding the work of the secretary and he will prove a valuable factor in continuing the future activities of the organization. It is planned to resume the work of education along the lines of preventing and relieving tuberculosis through the state, as had been begun through the activities and enthusiasm of Dr. Kellogg.

NORTHWEST MEDICINE

THE JOURNAL
of the
WASHINGTON STATE MEDICAL ASSOCIATION.
Publication Committee: C. H. Thomson, M. D.; C. W. Sharples, M. D.;
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Published Monthly by the Washington Medical Library Association.

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Editorial and Business Office - Marion Building, Seattle, Wash.

Subscription Price, $2.50 per annum in advance. Single Copies, 25 Cents.
Foreign Countries, $3.00 per annum.

Entered March 14, 1903, at Seattle, Wash., as Second Class Matter, under
Act of Congress of March 3, 1879.

VOL. VII. JANUARY, 1909. NO. 1

A HAPPY NEW YEAR.

To the physicians of the Northwest we extend hearty greetings for the new year with the hope that health and prosperity may attend their footsteps during the coming twelve months. The prevailing predictions for good times in the near future ought to instill an optimistic spirit into all of us. When the melon is cut cut no one deserves a goodly share of it more than the hard working doctor. May he get what is coming to him and that at an early date. We may safely anticipate an unusual increase of population during the coming summer, due chiefly to the exposition visitors and the consequent widespread information concerning our state. This will bring more work for the doctors, in spite of the attending increase in their numbers. In the daily bustle of our new country one needs to put forth constant effort to keep abreast of the progress of scientific medicine. In the absence of the inspiration of trained and enthusiastic workers who are so active in eastern centers of medical learning, the spirit of work and progress soon goes to sleep unless the individual is alive to the need of activity for his own benefit. We commend this thought to our progressive readers.

The future outlook for this journal is one of uncertainty. We have completed an existence of six years, which has brought a varied and mingled experience of encouragement and disappointment. Hard work has devolved on a few to maintain it, being entirely a labor of love, with the hope of sustaining an institution that would be recognized as a benefit to the profession of the Northwest, the members of which are judges of the success of our efforts. We have done pioneer work in this section in the line of an association journal, and it has been some satisfaction to note the widespread desire in the three states for a broader extension of such a journal. If the three associations conclude to unite on one common publication and, as a result, the field for this journal as it has thus far existed shall disappear, we shall sink into oblivion with the satisfaction of having accomplished something to be remembered and the knowledge that we have worked conscientiously and sincerely. In the meantime we shall continue as in the past years with our monthly appearance.

The prospects are good for a notable meeting of the four associations in Seattle next month. Preliminary plans are being developed which will be worked out in detail at a meeting this month in Portland of the officers of the four organizations. The opportunity of thus bringing together the members has not before been offered. It is to be hoped that its many possibilities may be so realized as to warrant the establishment of future periodical meetings of this character.

PHYSICIANS AND THE EMMANUEL MOVEMENT.

The recent visit to the Pacific coast of one of the active leaders of the psychotherapy treatment at the Emmanuel Church, of Boston, who delivered many addresses on his work, has called particular attention of the general public, as well as physicians of this section, to this form of treating certain ailments. While the uninformed among the laity appear to consider that these reverend gentlemen have introduced a new and mysterious form of treatment, their physicians well know this is simply an old therapeutic friend attired in new garments. One commendable feature of the work of these clergymen is the lucid explanation that this mental treatmnt of psychic disorders is but a modern adaptation of a very ancient form of cure. Its appeal to and resultant co-operation on the part of some members of our profession is due in part to their honest and free declaraton that the treatment is limited to what its advocates believe to be cases of functional ailments, they declining to attempt those recognized as organic disorders. In this is observed a distinction from all other modern cults of mental therapy, under whatever style of religio-scientific or mental designation they may pose before the public. Thus this seems to be the most worthy of confidence of all attempts yet offered of a non-medical method of handling a medical problem.

It has been of interest, during recent months, to note the comments of the medical press on this subject. There has been a general recognition of the efficacy of this form of therapy for certain functional complaints and acknowledgement that it seems to have filled a vacancy left by very many physicians. Some commend it heartily and wish its promoters success in their future endeavors. On the other hand, a warning of danger is sounded lest this lay movement, at first exercised by judicial and skillful hands, be abused to the injury of confiding invalids on the part of enthusiastic but illy prepared mental practitioners. The *Boston and Medical Surgical Journal,* whose views are especially forceful by reason of its proximity to the origin of this movement, states that it does not at present command the support and co-operation of any physicians of prominence in its own city. It warns the profession against an unwarranted endorsement of these amateur practitioners and calls attention to the danger of this form of treatment soon getting beyond bounds that can be controlled by its originators.

This whole question is another example of the failure of our medical schools to train their students in some useful branches beside those of the traditional, scientific character. How many graduates have ever been drilled by their instructors in the psycho-therapeutic measures whih have proved so successful in the hands of these and so many other schools of mental healers? None of these people possess any knowledge or power over the minds of the sick that should not be in the grasp of every well educated physician. We recognize that every physician avails himself of mental suggestion in his daily practice. In fact, he can not successfully practise medicine without the employment of these very principles so loudly heralded by the various popular mental healers. But the average physician fails to recognize the means at hand for accomplishing the same results attained by the Eddyites, the Emmanuel healers and all others of similar nature. The longer one treats the sick the more is he impressed with the necessity of treating the mental rather than the physical condition of a large class of patients. If he has not been instructed in this line of practice in his student days, his training must come later from the experience of many failures, varied with the joy of an occasional success. The lesson to be impressed on the observing physician from this Emmanuel treatment is that he must employ the same methods so successfully exercised by its supporters, supplemented by the medical knowledge and training that cannot be utilized by any clergyman or other man who has not passed through the necessary years of medical study. We would not by any means depreciate the good work thus accomplished by our clerical friends, but would insist that physicians should hesitate to refer any patient to a layman for treatment, whose welfare demands trained medical skill.

THE TUBERCULOSIS EXHIBIT.

The state commission of the A.-Y.-P. Exposition has appropriated the sum of $4,500 to be used by the State Board of Health for a health exhibit for this state. The board proposes to utilize about one-half of this amount for a tuberculosis exhibit. Among other features this will contain a large collection of lantern slides illustrating many phases of this problem, such as predisposing causes, various unsanitary conditions, tuberculosis sanatoria, statistics and other instructive features; photographs of sanatoria in various parts of the world and other means of combatting this disease; models of tents, buildings and other appliances for treatment. Suitable provision will be made for housing this exhibit so that it may be inspected by all comers. It is also proposed to provide for daily lectures on tuberculosis, at the same time employing this material for public instruction. It is expected thus to bring the facts about tuberculosis and its possible cure to the attention of a large number of people of this state. When the Exposition closes the exhibit will remain the property of the State Board of Health, to be used as a traveling exhibit for the use and instruction of any section where it may be desired, probably under the auspices of the State Association for the Prevention and Relief of Tuberculosis. The possession of this exhibit will place this among the foremost states as concerns the facilities for instructing the public on this burning topic. It is universally recognized that the dissemination of knowledge on this world-wide disease is of pre-eminent importance in order to awaken the public to provide means for fighting it and eventually to suppress it. The whole medical profession will rejoice at the prospect of this forward step in the fight against this terrible enemy of mankind.

A WORD TO THE COUNTY SOCIETIES.

It has always been one of the aims of this journal to serve as a means of communication between the county societies through the reports of their monthly meetings. To this end we have periodically requested the secretaries to send us their reports for publication. Such records are of value to members of one's own society, as well as of interest to those of others who can thus learn of the activities of the physicians in other parts of the state. We regret that advantage of such publication has been taken by only a few societies, as a rule, and usually in an intermittent fashion by them. With the beginning of the new year we wish to renew the requeest to the incoming secretaries to send us their reports of their meetings for publication, which should reach us by the 20th of the month preceding each issue.

MEDICAL NOTES.

The Washington State Association of Health Officers was formed in Seattle at a meeting held Dec. 12. Problems affecting the health of the state were discussed, special attention being paid to tuberculosis, typhoid and other preventable diseases. It was stated that one-fourth of the deaths during the past year were caused by preventable diseases. Severe criticisms were passed on physicians who retard the work of health officers by failing to report or concealing contagious diseases and who interfere with quarantine regulations.

Officers elected were: President, J. E. Crichton, Seattle; vice-prsidents, W. W. Ballaine, Bellingham, and M. B. Grieve, Spokane; secretary, A. A. Braymer, Seattle; executive committee, W. B. Wells, Hoquiam; E. E. Martin, Bellingham; W. F. Morrison, Spokane; J. R. Yocum, Tacoma; A. J. McIntyre, Hoquiam. A legislative committee was appointed to work for the passage of a bill to construct a state tuberculosis sanatorium, composed by R. D. Wiswell, Vancouver; M. B. Grieve, Spokane; C. E. Martin, Bellingham; J. R. Yocum, Tacoma; A. M. Duryee, Everett.

Pacific Slope Public Health Association. Health officers from California, Oregon, Washington and British Columbia met at Portland, Dec. 15, and organized this association, the main object being to continue the fight against bubonic plague on the Pacific Coast. Officers elected were: President, N. K. Foster, Sacramento; vice-president, R. C. Yenney, Portland; secretary, E. E. Heg, Seattle. The executive board includes these officers and E. A. Fagan, Victoria; J. C. Broderick, San Francisco.

Physicians in the Washington Legislature. The present session of the legislature is marked by having the smallest representation of physicians for many years. The profession has none of its members in the senate, while only three have been elected to the house. They are Drs. W. T. Christensen and J. A. Ghent, of Seattle, and W. N. Beach, of Shelton.

A State Tuberculosis Sanatorium. If the multiplicity of demands for a sanatorium have any significance, it would seem that the Washington legislature might be persuaded to pass an appropriation for a tuberculosis sanatorium at the present session. The organized body of health officers has declared itself pledged to work for such a result; various commercial bodies have passed resolutions urging such action; Governor Mead has more than once declared for it. Dr. Ghent, of King County, announces that he will introduce a bill calling for a large appropriation for such an institution. If all these forces will unite on one measure, eliminate politics from it and work only for the public good, we may hope for substantial results.

The Occupation Tax in Portland. Warrants were recently issued from the municipal court of Portland for the arrest of a large number of physicians and dentists who had failed to pay the occupation tax of $2, in accordance with an ordinance passed in May. As only a few had submitted to this little municipal graft and a penalty was attached to each day of failure to produce the coin, it was possible to bleed the professional men in good sized sums. It was proposed, however, to pull each one to the amount of the $2 per head.

Licensed Physicians Alone Can Use "Dr." The Washington supreme court has affirmed the decision of the Whatcom County superior court in the case against "Dr. Pollman," an "osteopathic, drugless and magnetic physician" of Bellingham, who was fined for violating the medical law of 1901. The decision is a sweeping one and declares it unlawful for any person to practise medicine or surgery in the state who has no license, or to advertise himself as Dr., doctor or physician.

New Fannie Paddock Hospital. New buildings are to be added to this hospital, at Tacoma, involving an outlay of $150,000, that will practically make it a new hospital, up to date in all respects, with the latest appliances and facilities. It is estimated two years will be required to complete them.

Banquet of Spokane County Society. This society held its annual banquet at Spokane, Dec. 10, attended by 100 members and guests. President W. W. Potter introduced N. Fred Essig, who acted as toastmaster. The guests included Lieutenant-Governor-elect M. E. Hay, who spoke on the subject, "Should the Legislature Memorialize Congress on the Need of National Health Legislation " It was discussed, among others, by State Senator W. H. Paulhamus, of Pierce County.

Banquet of Snohomish County Society. This society held its annual banquet at Everett, Dec. 30, attended by 20 members and guests. President F. R. Hedges presided and introduced various speakers, among them being C. A. Smith, of Seattle, who responded to "Our State Society," and E. E. Heg, of Seattle, who spoke on "Health and Sanitation." Mr. Bell, of Everett, editor of the evening daily paper, delivered some witty and pertinent remarks on "Medical Advertising."

OBITUARY.

Dr. Edwin S. Hutchins died suddenly in his office, at Spokane, Oct. 28, from disease of the heart. He was born at Henry, Ill., in 1873. He graduated from Northwestern University with the degree of A. B., in 1897 and from the Hahnemann Medical College, Chicago, in 1900. After graduation he served as first assistant to the head surgeon of the institution till 1903, when he entered general practice in Chicago. A year later he had to give this up because of poor health. For two years he traveled for his health, returning to Chicago in 1906, where he spent a year in the Eye, Ear, Nose and Throat Hospital. In the spring of 1907 he began practice in Spokane as specialist in these branches.

Dr. William J. McGuigan died Dec. 25, at Vancouver, B. C. He was born in Easthope, Ontario, in 1853. After studying at the Stratford Collegiate Institute he taught school for several years. In 1879 he graduated from McGill University and began practice of medicine at Detroit. In 1885 he went to British Columbia as surgeon for the C. P. R. construction work. After completion of the road he practised in Vancouver. He was appointed first coroner of Vancouver, which position he held till his death. He was an alderman for seven years and mayor of Vancouver in 1904. He was a member of the British Columbia Medical Association and its treasurer for 20 years.

CORRESPONDENCE.

THE RECIPROCITY QUESTION.

To the Editor:

It appears to me that the matter of reciprocity between states, that is, granting the right to a man holding a license in one state to obtain, without examination, a similar license in another, is faulty, if there be any justice in the prerogative of the legislature as an agent of the people to specify who should or should not practise medicine within its jurisdiction. The state of Oregon needs protection against incompetents who may live in Washington and the state of Washington needs protection against incompetents who may live in Oregon, and no one would deny that such incompetents live in both communities. I can see no more reason why such a class of physicians from Oregon should be allowed to practise in Washington than for accepting a similar class of physicians from the state of Maine. In other words, this, as a rule, would be a type of class legislation in which the legislature confers a certain favor upon a man because he happens to live in Oregon, in place of some state East of the Mississippi, where the respective board's requirements are possibly more rigid than they are in this state.

I take it that the law, as it now stands, does not confer any class privileges upon any physician but, as stated in the editorial, in your December issue, on "Unlicensed Practitioners and the State Medical Examining Board," "medical Boards are in no way the agent or representative of the medical profession," and it also says, "as a Board and as a state institution it has no justification for considering or taking into account what many medical men seem to consider to be their personal or professional right, nor has it any right to consider what sort of college the applicant may be a graduate of." It is not an injustice to any sort of a man to be compelled to abide by the laws that may be enacted for the protection of the public at large.

A few years ago polygamy was at least tolerated in Utah and, so far as I know, was legalized by that commonwealth, but I am sure that the residents of the state of Washington never saw the time that they cared to confer the right of dual marriage within her boundaries upon any individual, just because he came from Utah and there had a legal right to be a bigamist. It is a poor rule that will not work both ways.

Seattle, Wash. C. W. Sharples, M. D.

REPORTS OF SOCIETY MEETINGS.

KING COUNTY MEDICAL SOCIETY.

President, J. R. Booth, M. D.; Secretary, G. N. McLoughlin, M. D.

The regular semi-monthly meeting of the King County Medical Society was held in the medical library, Seattle, December 7, with President Booth in the chair. In the absence of Dr. McLoughlin, John Hunt acted as secretary pro tem.

Clinical Cases.

Nevus of the Face. L. H. Redon presented a woman with a nevus, 3 by 2 inches, on left side of face, with a warty base and covered with hair. His plan of treatment was X-ray exposures to kill the hair and then repeated application of CO_2 snow to remove the hypertrophied base. Dr. Lensman considered this good treatment but he had found thiosinnamin produced good results. Dr. Hahn reported satisfactory use of the latter remedy intravenously in extensive scars from severe burns. Dr. Miles thought barium salts might be of use in these cases. Dr. Fick referred to the successful use of boiling water injections for a wine colored nevus. Dr. Redon mentioned sloughing sometimes resulting from the hot water injections.

Pathologic Specimens.

S. F. Wiltsie presented the following specimens: (1) Extrauterine pregnancy, with unruptured sac, removed from a woman of 30 years, followed by uneventful recovery; (2) Extrauterine pregnancy, ruptured, from a woman of 28 years, followed by uneventful recovery; (3) Double uterus, removed from a girl of 16, in whom was an absence of vagina; (4) Lower portion of rectum showing a perforation the size of finger tip, situated on posterior wall about 4 inches from anus. The condition was caused by instrumental examination with death of the patient about 24 hours later. The specimens were discussed by Drs. Smith, Brown and Hahn.

Paper.

Cardio-vascular Renal Disease. E. P. Fick read this paper, calling attention to the fact that results of examination of the urine were not necessarily indicative of organic disease of the kidneys. A true diagnosis of renal disease can be determined only after examination of the cardio-vascular system, urinary examinations being only corroborative information. More attention should be paid to location of heart apex beat, determining size of heart, accentuation of second aortic sound and blood pressure. Dr. Hahn discussed the importance and results of a salt free diet in kidney diseases.

It was voted to devote the next meeting to pioneer reminiscences, a paper on the medical library, in addition to the annual address of the president, to be followed by refreshments.

The following were appointed as a banquet committee: Drs. Peterkin, Redon, Hawley, Davidson and Elmore.

Drs. Teepell, Heavenrich and Collier were elected to membership.

The second regular semi-monthly meeting of the society was held Dec. 21. In the absence of Dr. McLoughlin, John Hunt acted as secretary pro tem.

Annual Address. Being the last regular meeting of the year, President Booth delivered his annual address, in which he reviewed the work of the society for the past year, stating also that the growth in membership had been greater than in any preceding year. He urged the members to work to make Seattle a leading medical center and emphasized the importance of more rigid laws to suppress illegal practitioners.

Treasurer Ostrom submitted his report, showing a balance on hand of $751.49.

Nomination of Officers. The following were nominated for president for the ensuing year: Drs. Willis, Newlands, Carroll and Calhoun; for vice-president: Drs. Stith, Peterkin and Hunt; for treasurer, H. C. Ostrom; for secretary, L. H. Redon.

H. J. Davidson, for the banquet committee, reported that the banquet would be held at the New Washington, Jan. 18.

Talks on Pioneer Days. Interesting and short addresses on personal experiences in the early days of Seattle were given by Drs. Dawson, Mitchell, Will Shannon, Sweeney, Sharples and Sunberg. Facts were given as to the work of the society since its establishment in Aug., 1888.

The Medical Library. J. B. Eagleson gave an address on the origin and work of establishing the medical library, mentioning the relation to it of Northwest Medicine, and calling attention to the necessity of the medical profession sustaining it for the future.

Application for membership was received from J. W. Richardson.

LINCOLN COUNTY MEDICAL SOCIETY.

President, A. D. Snyder, M. D.; Secretary, L. F. Wagner, M. D.

The annual meeting of the Lincoln County Medical Society was held at Davenport, Dec. 2, at the office of Dr. R. B. Moore. The following officers were elected for the year 1909: President, Lee Ganson, Odessa; vice-president, R. P. Moore, Davenport; secretary-treasurer, L. F. Waggoner; censor for three years, Morton Myers. The election of officers was followed by a banquet at the Hotel Vendome.

WHATCOM COUNTY MEDICAL SOCIETY.

President, W. N. Hunt, M. D.; Secretary, S. J. Torney, M. D.

The regular monthly meeting of the Whatcom County Medical Society was held at Bellingham, Wash., Dec. 14. The following officers were elected for the year 1909: President, S. H. Johnson, Bellingham; first vice-president, L. R. Markley, Bellingham; second vice-president, E. S. Clark, Sumas; third vice-president, E. S. Reedy, Blaine; secretary, J. Reid Morrison, Bellingham; treasurer, C. S. Holt, Bellingham; executive committee, W. H. Hunt and F. J. Vankirk; committee on admission, W. H. Wear and W. C. Keyes; committee on inquiry, G. F. Cook and S. J. Torney.

OFFICERS AND MEMBERS OF THE WASHINGTON STATE MEDICAL ASSOCIATION FOR 1908-1909.

General Officers: President, C. A. Smith, Seattle; 1st vice-president, Y. C. Blalock, Walla Walla; 2d vice-president, W. D. Kirkpatrick, Bellingham; secretary, C. H. Thomson, Seattle; treasurer, L. L. Love, Tacoma.

Delegates to A. M. A., 1908 and 1909: J. R. Yocom, Tacoma; alternate, J. C. Cunningham, Spokane.

Judicial Council: H. M. Read, J. R. Yocom, Frank Rose, L. M. Sims, C. S. Hood, A. E. Stuht, Bert Thomas, C. J. Lynch and F. H. Luce.

COMMITTEES APPOINTED FOR 1908-1909.

Publication: C. H. Thomson, C. W. Sharples, L. H. Redon.

Medical Legislation and Public Policy: J. R. Yocom, H. M. Read, F. H. Luce.

Press and Public Information: L. R. Markley, S. Sargentich, M. B. Grieve, G. N. McLoughlin, A. E. Stuht.

State Medical Examining Board: N. F. Essig, H. W. Dewey, E. E. Heg, H. W. Howard, W. D. Kirkpatrick.

Auditing: H. E. Allen, W. C. Cox, J. G. Cunningham.

Necrology: C. H. Thomson, F. Hinman, Bert Thomas, K. Winslow, A. DeY. Green.

Tuberculosis: J. Sutherland, W. R. M. Kellogg, W. P. Duryee.

Venereal Prophylaxis: G. S. Peterkin, E. E. Shaw, A. M. Smith.

Medical Journals: J. B. Eagleson, C. N. Suttner, J. R. Yocom.

Reciprocity: K. Turner, C. J. Lynch, J. E. Else.

MEMBERS OF THE ASSOCIATION AND OFFICERS OF THE COMPONENT COUNTY SOCIETIES.

The following list includes the members of the county societies who were in good standing in the State Medical Association Jan. 1, 1909.

ASOTIN COUNTY MEDICAL SOCIETY.

President. L. Woodruff; Secretary, D. H. Ransom.

Brazeau, S. D., Asotin.
Fulton, H. C., Asotin.
Johnson, P. W., Clarkston.
McElvain, J. S., Clarkston.
Ransom, D. H., Clarkston.
Temple, I. U., Pendleton, Ore.
Woodruff, L., Asotin.

BENTON COUNTY MEDICAL SOCIETY.

President, C. C. McCown; Secretary, H. W. Howard.

Angus, D. M., Prosser.
Crosby, F. M., Kennewick.
French, H. M., Prosser.
Howard, H. W., Prosser.
McCown, C. C., Prosser.

CHEHALIS COUNTY MEDICAL SOCIETY.

President, D. A. Schumacher; Secretary, D. C. Wise.

Austin, A. S., Aberdeen.
Austin, O. R., Aberdeen.
Bartlett, C. E., Aberdeen.
Blair, Hannibal, Elma.
Carr, F. L., Hoquiam.
Chamberlin, G. E., Aberdeen.
French, E. P., Elma.
Hunter, R. F., Hoquiam.
McDonald, J. F., Hoquiam.
McIntyre, A. J., Hoquiam.
McNiven, J. A., Aberdeen.
Pearson, M. L., Aberdeen.
Schumacher, D. A., Aberdeen.
Stapp, M. R., Aberdeen.
Urie, D. C., Aberdeen.
VanWinkle, J. O., Oakeville.
Walston, J. S., Montesano.
Watkins, H. C., Hoquiam.
Watkins, I. R., Aberdeen.
Wells, W. B., Hoquiam.
Wise, D. C., Aberdeen.

CENTRAL WASHINGTON MEDICAL ASSOCIATION.

President, C. Gilchrist; Secretary, A. T. Kaup.

Blake, J. H., Wenatchee.
Culp, F. E., Wenatchee.
Gilchrist, C., Wenatchee.
Hoxey, G. H., Leavenworth.
Kaup, A. T., Wenatchee.
King, D. W., Wenatchee.
Martin, Harry, Cashmere.
McCoy, W. M., Leavenworth.
Mitchell, A. I., Chelan.
Saunders, H. A., Wenatchee.
Shore, J. E., Leavenworth.

CLALLAM COUNTY MEDICAY SOCIETY.

President, S. W. Hart; Secretary, D. E. McGillivray.

Cook, L. A. H., Seguin.
Hartt, S. W., Port Angeles.
Lewis, F. S., Port Angeles.
McGillivray, D. E., Port Angeles.

CLARKE COUNTY MEDICAL SOCIETY.

Black, R. G., Vancouver.
Goddard, H. S., Yacolt.
Hixon, E. F., Vancouver.
Sawins, A. H., Vancouver.
Scanlon, J. D., Vancouver.
Smith, J. R., Vancouver.
Smith, R. L., Washongal.
Stryker, R. S., Ridgfield.
Wiswall, R. D., Vancouver.
Wright, S. L., Camas.
Zener, C. R., La Center.

COWLITZ COUNTY MEIICAL SOCIETY.

President, F. M. Bell; Secretary, L. M. Sims.

Bales, C. W., Kelso.
Ballard, J., Kelso.
Barkman, H. C., Raymond.
Bell, F. M., Kelso.
Bird, F. A., Kelso.
Campbell, T. C., Castle Rock.
Chapman, A. H., Woodland.
Sims, L. M., Kalama.
Wendt, S. M., Castle Rock.

KING COUNTY MEDICAL SOCIETY.

President, Grant Calhoun; Secretary, L. H. Redon.

Ahlman, E. R., Hoquiam.
Allen, H. E., Seattle.
Ashton, F. L., Seattle.
Bailey, J. W., Seattle.
Bates, U. C., Seattle.
Bentley, Frederick, Seattle.
Bickford, E. L., Seattle.
Black, F. A., Seattle.
Bleuler, E. A., Seattle.
Booth, F. A., Seattle.
Booth, J. R., Seattle.
Booth, W. G., Seattle.
Bourns, F. S., Seattle.
Bridenstine, S. J., Ballard.
Bronson, Adolph, Brighton Beach.
Brown, H. D., Seattle.
Buckley, Daniel, Seattle.
Calhoun, Grant, Seattle.
Canfield, H. H., Seattle.
Capron, V. J., Roche Harbor.
Carroll, F. M., Seattle.
Case, S. W., Seattle.
Christensen, W. T., Seattle.
Churchill, F. A., Seattle.
Clark, H. J., Seattle.
Conn, F. M., Seattle.
Cook, C. T., Seattle.
Cook, Frederick, Interbay.
Corson, W. H., Georgetown.
Cowan, C. B., Seattle.
Creighton, J. E., Seattle.
Crooks, J. W., Seattle.
Crookall, A. C., Seattle.
Cunningham, W. S., Seattle.
Davidson, H. J., Seattle.
Davis, C. W., Seattle.
Dawson, L. R., Seattle.
Dean, S. J., Seattle.
DeBeck, David, Seattle.
Eagleson, J. B., Seattle.
Eaton, C. E., Seattle.
Edwards, J. W., Port Townsend.
Edwards, A. F., Seattle.
Edwards, Orange, Seattle.
Elmore, Bruce, Seattle.
Engels, C. F., Seattle.
Ewing, D. A., Seattle.
Everly, M. L., Seattle.
Falk, Fred, Seattle.
Fassett, F. J., Seattle.
Fick, E. P., Seattle.
Fiset, L. O., Seattle.
Fleischer, H. J., Seattle.
Ford, C. B., Seattle.
Gardner, F. P., Seattle.
Ghiglione, A. J., Seattle.

Gibson, W. C., Seattle.
Gibson, W. E., Issaquah.
Gillen, R. H., Seattle.
Greenstreet, A. G., Seattle.
Greason, C. E., Skykomish.
Griswold, W. S., Seattle.
Guthrie, C. E., Columbia.
Hanley, E. T., Seattle.
Hahn, B., Seattle.
Harris, J. E., Arlington.
Harrison, A. B., Seattle.
Harrison, I. M., Seattle.
Harrison, Millard, Seattle.
Hastings, W. C., Seattle.
Hawley, A. W., Seattle.
Hawley, G. W., Seattle.
Heg, E. E., Seattle.
Hemmeon, J. A. M., Seattle.
Heussy, W. C., Seattle.
Hibbs, W. A., Seattle.
Holcomb, C. M., Seattle.
Holmes, S. J., Seattle.
Hooker, S. V. R., Seattle.
Horton, G. M., Seattle.
Horsfall, F. L., Seattle.
Hoye, C. E., Seattle.
Hunt, J. W., Seattle.
Irvin, L. C., Seattle.
James, R. J., Seattle.
Janson, Elio, Seattle.
Janson, Ivar, Seattle.
Jenner, William, Seattle.
Johanson, N. A., Seattle.
Johnston, Walter, Seattle.
Jones, E. O., Seattle.
Jordan, Arthur, Seattle.
Keith, L. R., Seattle.
Kidd, A. B., Seattle.
Lazelle, H. G., Seattle.
Lessing, Albert, Seattle.
Lind, C. O., Seattle.
Lippincott, W. C., Seattle.
Livingston, David, Black Diamond.
Loe, A. O., Seattle.
Loughary, J. B., Seattle.
Ludlow, W. L., Seattle.
Lyon, D. B., Seattle.
Lyons, J. H., Seattle.
Marsh, Marietta, Seattle.
Martin, C. M., Bellevue.
Maxson, Frank, Seattle.
MacKinnon, J. A., Seattle.
McClure, C. E., Seattle.
McCulloch, J. B., Seattle.
McDonald, E. A., Seattle.
McDowell, W. M., Seattle.
McKechnie, M. E. A., Seattle.
McKibbin, E. C., Seattle.
McLeish, A. H., Seattle.
McLoughlin, G. N., Seattle.
Merritt, F. D., Auburn.
Miles, W. T., Seattle.
Miller, H. D., Seattle.
Miller, H. L., Seattle.
Millett, J. H., Seattle.
Mitchell, D. A., Seattle.
Mohrman, Emil, Seattle.
Moore, J. C., Seattle.
Nadeau, Fonda, Seattle.
Neville, E. C., Seattle.
Neville, L. C., Seattle.
Newlands, Geo., Seattle.
Nicholson, D. A., Seattle.
O'Rourke, W. R., Seattle.
O'Shea, J. H., Seattle.
Ostrom, H. C., Seattle.
Owens, S. A., Seattle.
Palmer, D. H., Seattle.
Palmer, F. S., Seattle.
Parker, Maud, Seattle.
Parry, I. A., Seattle.
Paschall, B. S., Seattle.
Patterson, W. M., Seattle.
Peacock, A. H., Seattle.
Perry, R. M., Seattle.
Peterkin, G. S., Seattle.
Phillips, Fredericka, Seattle.
Pierrot, G. F., Ballard.
Pontius, N. D., Seattle.
Powell, F. L., Seattle.
Powers, W. N., Seattle.
Purman, R. M., Seattle.
Raberge, F. A., Seattle.
Randell, G. H., Seattle.
Raymond, Alfred, Seattle.
Read, H. M., Seattle.
Redon, L. H., Seattle.
Reese, H. L., Ballard.
Richter, J., Seattle.
Rininger, E. M., Seattle.
Ross, R. R., Seattle.
Rust, H. H., Enumclaw.
Russell, Montgomery, Seattle.
Saxe, Cora, Seattle.
Seelye, W. K., Seattle.
Shannon, James, Seattle.
Shannon, W. A., Seattle.
Sharples, C. W., Seattle.
Shellabarger, D. S., Seattle.
Sleicher, J. M., Chehalis.
Sloan, T. W., Seattle.
Smith, C. A., Seattle.
Smith, J. J., Enumclaw.
Snow, A. G., Seattle.
Snyder, J. C., Seattle.
Spurgeon, G. C., Seattle.
Stevens, J. E., Seattle.
Stewart, S. J., Seattle.
Stillson, H. H., Seattle.
Stith, R. M., Seattle.
Stone, D. M., Seattle.
Sturgis, Milton, Seattle.
Sullivan, T. J., Ssattle.
Sundberg, J. C., Seattle.
Sweeney, J. P., Seattle.
Taake, E. F., Seattle.

Thomas, J. W., Seattle.
Thomson, C. H., Seattle.
Turner, Kenneth, Seattle.
Turner, W. K., Seattle.
Tymms, W. R., Seattle.
Underwood, F. R., Seattle.
Uyematzu, T., Seattle.
vonPhul, P. V., Seattle.
Warhanik, C. A., Seattle.
Warmburg, Geo., Seattle.
Watanabe, J., Seattle.
Waughop, P. H., Seattle.
Whiting, F. B., Alaska.
Wiger, N. N., Seattle.
Wiltsie, S. F., Seattle.
Willis, P. W., Seattle.
Winslow, Kenelm, Seattle.
Wolley, W. T., Seattle.
Wright, H. A., Seattle.
Wood, C. B., Seattle.
Woodin, S. P., Georgetown.
Wotherspoon, John, Seattle.

KITTITAS COUNTY MEDICAL SOCIETY.

President, H. J., Felch; Secretary, G. M. Steele.

Baldwin, T. C., Beverly.
Felch, H. J., Ellensburg.
Hoeffler, C. L., Ellensburg.
Kearby, D. C., Cle Elum.
Newgord, J. S., Roslyn.
Mahan, J. A., Ellensburg.
McCauley, J. C., Ellensburg.
Steagall, T. R., Ellensburg.
Steele, G. M., Ellensburg.
Stimpson, E. W., Roslyn.

LEWIS COUNTY MEDICAL SOCIETD.

President, B. G. Godfrey; Secretary, C. R. Harden.

Baldwin, Margaret, Centralia.
Banks, R. B. L., Centralia.
Botzer, Wm., Mayfield.
Campbell, R. H., Little Falls.
Coleman, J. T., Chehalis.
Dow, G. H., Chehalis.
Dumon, J. H., Centralia.
Godfrey, B. G., Chehalis.
Harden, Chas., Chehalis.
Hotchkiss, W. B., Chehalis.
Kniskern, E. L., Centralia.
Petit, H. L., Chehalis.
Primmer, Thos., Centralia.
Stevens, E. W., Dryad.
Thompson, J. D., Winlock.
Weichbrod, I. A., Little Falls.

LINCOLN COUNTY MEDICAL SOCIETY.

President, A. D. Snyder; Secretary, L. F. Wagner.

Adams, O. L., Davenport.
Bittner, J. E., Sprague.
Corpening, J. M., Harrington.
Dean, H. Z., Reardan.
Edward, J. T., Wilbur.
Ganson, Lee, Odessa.
Green, G. H., Reardan.
Gunning, J. M., Harrington.
Hamley, E. C., Sprague.
Kaulbach, J., Edwall.
Luce, F. H., Davenport.
McRae, R. D., Hunter.
Mitchell, Henry, Wilson Creek.
Moore, G. W. H., Davenport.
Moore, R. P., Davenport.
Starr, J. N., Wilbur.
Wagner, L. F., Harrington.
Starr, J. N., Wilbur.
Whitney, H. J., Cashmere.

OKANOGAN COUNTY MEDICAL SOCIETY.

President, H. M. Fryer; Secretary, C. R. McKinley.

Couche, C. B., Twisp.
Fryer, H. M., Riverside.
House, C. P., Oroville.
McKinley, C. R., Brewster.
Rogers, Albert, Okanogan.
Schwabland, W. T., Oroville.
Schwabland, W. W., Loomis.
Tyler, F. A., Molson.

PACIFIC COUNTY MEDICAL SOCIETY.

President, G. W. Overmeyer; Secretary, G. A. Tripp.

Dalton, Henry, South Bend.
Hinkley, E., Le Bam.
Nevitt, O. R., Raymond.
Overmeyer, G. W., South Bend.
Paul, L. W., Ilwaco.
Scase, L. W., South Bend.
Tripp, G. A., South Bend.

PIERCE COUNTY MEDICAL SOCIETY.

President, R. A. Gove; Secretary, O. E. Sutton.

Allan, Hamilton, Tacoma.
Ball, R. O., Tacoma.
Balabanoff, C. P., Tacoma.
Balabanoff, I. P., Tacoma.
Balabanoff, M. C., Tacoma.
Bean, J. W., Tacoma.

Brenton, P. R., Mineral.
Bridge, A. W., Tacoma.
Brown, E. M., Tacoma.
Brown, J. R., Tacoma.
Brown, Warren, Tacoma.
Calhoun, A. P., Steilacoom.
Carlson, E. S., Tacoma.
Case, C. E., Tacoma.
Coleman, A. H., Tacoma.
Chenowith, W. S., Fern.
Corliss, J. H., Sumner.
Delaney, F. J., Tacoma.
Dewey, H. W., Tacoma.
Douglas, Wm., Tacoma.
Fifield, E. J., Tacoma.
Flynn, A. M., Tacoma.
Foreman, B. H., Tacoma.
Garnett, R. S., Tacoma.
Gove, R. A., Tacoma.
Gove, D. W., Tacoma.
Griggs, J. F., Tacoma.
Green, A. deY., Tacoma.
Gulick, W. V., Tacoma.
Harrison, R. H., Tacoma.
Hicks, G. S., Tacoma.
Hill, F. R., Tacoma.
Hutchinson, J. L., Tacoma.
James, C. P., Tacoma.
Karshner, Wm., Puyallup.
Keho, J., Tacoma.
Keller, W. N., Tacoma.
Kinnear, C. H., Tacoma.
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Libby, G. A., Tacoma.
Loughlin, O. W., Tacoma.
Love, L. L., Tacoma.
McCreary, C. R., Tacoma.
McCreery, W. B., Tacoma.
McKone, J. J., Tacoma.
McNerthney, J. B., Tacoma.
Monroe, W. A., Tacoma.
Monzingo, A. S., Tacoma.
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Osborn, Albert, Tacoma.
Osborn, E. St. C., Tacoma.
Perkins, L. M., Tacoma.
Peterson, Hans, Tacoma.
Quevli, Christen, Tacoma.
Pratt, F. E., Tacoma.
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Regli, J. A. W., Tacoma.
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Robertson, J. B., Tacoma.
Rummel, T. C., Tacoma.
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Runnals, H. B., Puyallup.
Ryning, J. L., Tacoma.
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Sheets, J. H., Buckley.
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Southworth, F. W., Tacoma.
Spencer, J. H., Tacoma.
Stewart, A. C., Tacoma.
Stewart, F. J., Tacoma.
Sutton, E. O., Tacoma.
Swearingen, P. B., Tacoma.
Taylor, C. E., Wilkeson.
Tromald, E. A., Tacoma.
VanVetchen, W., Tacoma.
Wagner, G. W., Tacoma.
Wheeler, E. C., Tacoma.
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Brower, J. H., Spokane.
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Byrne, P. S., Spokane.
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Chapman, W., Spokane.
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Coe, A. H., Spokane.
Cox, F. E., Cheney.
Cunningham, A. R., Spokane.
Cunningham, J. G., Spokane.
Deitz, Wm., Medical Lake.
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Downs, G. A., Spokane.
Drake, J. E., Spokane.
Dutton, W. O., Spokane.
Eakin, D. F., Spokane.
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Essig, N. F., Spokane.
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Fursey, F. R., Spokane.
Genoway, C. V., Spokane.
Ghieslin, A. D., Spokane.
Graves, J. C., Spokane.
Gray, G. A., Spokane.
Greive, M. B., Spokane.
Grove, C. E., Spokane.
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Hall, W. L., Spokane.
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Harvey, F. C., Spokane.
Hendricks, Ralph, Spokane.
Hilcher, F. W., Spokane.
Hinman, Frank, Spokane.
Hoag, F. M., Spokane.
Harvey, L. B., Colville.
Hopkins, E. H., Spokane.
Hopkins, S. B., Spokane.
Howells, W. J., Spokane.
Hubbard, F. L., Spokane.
Ingersoll, E. L., Spokane.
Johnson, A. E., Spokane.
Johnson, W. H., Spokane.
Johnston, Wilson, Spokane.
Kalb, C. S., Spokane.
Kearns, R. J., Spokane.
Keene, R. K., Spokane.
Kelley, J. M., Rockford.
Kimball, E. L., Spokane.
Lambert, S. E., Spokane.
Lasater, J. H., Spokane.
Libby, G. W., Spokane.
Loffler, E. E., Spokane.
Luhn, H. B., Spokane.
MacLeod, A. F., Spokane.
Martin, H. S., Spokane.
Mason, D., Spokane.
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McCarthy, H. H., Spokane.
McCornack, P. D., Spokane.
McDowell, G .K., Spokane.
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Neeley, J. R., Spokane.
Nelson, E. B., Spokane.
Newell, R. I., Spokane.
Newman, W. M., Spokane.
Northrup, E. R., Spokane.
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O'Neal, F. W., Spokane.
Penfield, C. S., Spokane.
Penn, G. T., Spokane.
Pickrell, W. B., Spokane.
Pomeroy, F. A., Cheney.
Pope, E. F., Spokane.
Potter, W. W., Spokane.
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Prencel, J. E., Spokane.
Reid, Peter, Spokane.
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Roark, B. H., Spokane.
Roberts, G. W., Spokane.
Robins, M. C., Spokane.
Rohrer, G. A., Spokane.
Rose, Frank, Spokane.
Rose, F. E., Spokane.
Russell, D. G., Spokane.
Russell, T. A., Spokane.
Schlegel, H. E., Spokane.
Semple, J. M., Spokane.
Sellers, Wm., Spokane.
Setters, M. F., Spokane.
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Slatter, H. H., Deer Park.
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Smith, D. L., Spokane.
Smith, E. A. C., Latah.
Smith, Harvey, Spokane.
Smith, J. K., Chattaroy.
Sutherland, J., Spokane.
Tennant, R. W., Spokane.
Thompson, R. L., Spokane.
Tilmont, A. P., Spokane.
Tooker, R. N., Spokane.
Weisman, C. H., Spokane.
Wisner, W. O., Spokane.
Witter, F .P., Spokane.

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Kirkpatrick, W. D., Bellingham.
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Mehlig, H. M., Bellingham.
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Shute, F. V., Bellingham.
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Smith, H. R., Bellingham.
Smith, J. S., Bellingham.
Thompson, Henry, Bellingham.
Torney, S. J., Bellingham.
VanKirk, F. J., Bellingham.
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Benton, A. A., Pullman.
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Brand, W. W., Rosalia.
Brandon, W. C., Palouse.
Bumgarner, C. S., Thornton.
Campbell, D. R., Pullman.
Coberly, L. J., Garfield.
Cardwell, W. C., Colfax.
Cook, N. M., Palouse.
Devine, W. N., Elberton .
Dix, J. A., Garfield.
Dartt, W. S., Palouse.
Else, J. E., Palouse.
Farnham, W., Palouse.
Ferguson, T. D., Colfax.
Gains, W. S., Oakesdale.
Greene, H. M., La Crosse.

Hall, J. F., Albion.
Harris, J. L., Pullman.
Harvison, D. B., Palouse.
Harvison, M. W., Palouse.
Hein, E. T., Palouse.
Holzer, D. A., Uniontown.
Jones, C. B., Colton.
Marshall, H. P., Pullman.
Leuty, J. D., Farmington.
McGuire, E., Pullman.
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Miller, J. L., Oakesdale.
Mitchell, W. A., Colfax.
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Palmountain, W. B., Colfax.
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Wallace, W. S., Tekoa.
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Wells, H. R., North Yakima.
West, E. S., North Yakima.
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BOOK REVIEWS.

Edited by

Kenelm Winslow, M. D.

A Manual of Clinical Diagnosis. By James Campbell Todd, M. D., Associate Professor of Pathology, Denver, and Gross College of Medicine, Denver. 12mo. of 319 pp., with 131 text illustrations and 10 colored plates. Philadelphia and London: W. B. Saunders Company, 1908. Flexible leather, $2.00 net.

The volume is "designed for the student and the practitioner" and aims to present practical methods requiring "the least complicated apparatus and expenditure of time." "Simplicity has been considered to be more essential than absolute accuracy." The illustrations are profuse, excellent and valuable. On the whole, there is much of value in this little book, but of a nature which commends itself more to the trained microscopist familiar with aims and principles and seeking a brief resume of some technic than to the student. It lacks the vital fundamentals of presenting a clear, complete description of the normal character of the secretion, etc., under consideration before taking up the pathologic changes it may undergo. It fails to state in the chemical tests the general principles upon which these rest, an important omission, since in medicine, while means vary, principles remain the same. The preference given simplicity over accuracy is bad. One is constrained to feel that the writer meant to convey accurate simplicity instead. It has led to the introduction of questionable methods of technic, the omission of some tried and true methods and, worst of all, conveys the wrong idea to the student and tends to make him careless in technic. The simplicity itself is more apparent than real, for a comparison of Dr. Todd's book with others on the same subject shows practically the same tests. The bacteriology has been given insufficient consideration and, being scattered throughout the book, has been further weakened. The introduction of Cammidge's pancreatic reaction is to be commended. HEAVENRICH.

Text Book of Nervous Diseases and Psychiatry for students and Practitioners of Medicine. By Charles L. Dana, A.M., LL.D., Professor of Nervous Diseases in Cornell University Medical College, Visiting Physician to Bellevue Hospital, etc., etc. Seventh Edition; 261 engravings and 3 colored plates. Cloth, 9½x7 in. Price $5.00. William Wood & Co., 51 Fifth Ave., New York.

Throughout this work, one is impressed with the effort to connect the external symptoms with their anatomic cause. Along with the chemical discription of each organic disease, are excellent illustrations of the central lesions which make the symptoms what they are. Wherever possible the pathologic findings are stated in terms of cells and neurones rather than gross anatomic masses. This method is especially welcomed by one who wishes to make the study of neurology something other than a gigantic feat of memory. In the anatomy of the cerebrum is given considerable histologic material which, so far as we recall, is new. The cortex is found to consist of pretty definite layers of cells, recalling the similar formation in the retina.

Under "Cranio-cerebral Topograph" is given a method of surgical localization, which is as simple and probably more accurate than most of those suggested. Under "Neurological Therapeutics" we find very complete and detailed directions for the non-medical management of nervous patients. The classification of the mental diseases has been considerably simplified. The illustrative cases are well chosen. A preliminary chapter on General Psychology and one devoted to definitions of the more common psychologic terms should prove useful in refreshing the memory of the readers as to the obscure and confusing vocabulary in which all mental disease must be discussed. If the reviewer must find some fault, let us complain of the choice of words in the Anglo-Grecian hydrid of a title, "Nervous Diseases and Psychiatry." FASSETT.

Practice of Medicine for Nurses. By George Howard Hoxie, M. D., Professor of Internal Medicine, University of Kansas. With a chapter on the Technic of Nursing, by Pearl L. Laptad, Principal of the Training School for Nurses, University of Kansas. 12mo of 248 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $1.50 net.

This book is in large measure a superficial description of the etiology, pathology, symptoms and treatment of diseases. It is doubtful whether the work will prove of any noteworthy value to nurses. It is a debatable question how much more book instruction is wise or necessary for nurses than that sufficient to enable them to observe intelligently and report or act as the case may require. In a book like that under review it would appear that all matter should be selected which has a direct bearing upon the training and conduct of the nurse. This is far from the case, however. There are four pages devoted to gonorrhea, including a cut of the gonococcus and some description of this organism. Under treatment, nurses are cautioned to wear rubber gloves and to sterilize infected utensils, but no word of warning is uttered about the dangers of eye infection nor are directions given to avoid or combat such an accident. Two pages are used in detailed description of the symptoms and operative technic in appendicitis, but nothing whatever is said about the post-operative duties of the nurse and what good the preceding account can do her or us one can but dimly imagine. Moreover, the verbiage closely approximates the colloquial as exhibited by the author's expressions, "wash up" and heat "clear through." Altogether it does not seem that nurses would be made much more intelligent by what is told them in this book than the bell in Hood's verse —and he "told the sexton and the sexton tolled the bell."

WINSLOW.

A Manual of Obstetrical Technique: As Applied to Private Practice, with a Chapter on Abortion, Premature Labor and Curettage. By Joseph Brown Cooke, M. D., Adjunct Professor of Obstetrics in the New York Polyclinic Medical School and Hospital; Lecturer on Obstetrics to the New York City Training School for Nurses, etc., etc. Sixth edtion. Enlarged and fully revised. Philadelphia and London: J. B. Lippincott Company, 1908.

The subject of obstetrics is treated so superficially in many of our medical schools and the opportunities for practical work under competent instructors is so limited that many a young general practitioner finds that, in his first few obstetrical cases in private practice, he is hopelessly at sea and has to work out his own salvation. More so than in any other branch of medicine or surgery, the indications and contraindications in obstetrics are so clean cut and well defined and the results, with proper care and technic, are so brilliant that it is small wonder that, in the spring of 1900, when this little book first made its appearance, it was received with so much enthusiasm by the general practitioner and the obstetrical nurse. Dealing only with the practical side of the subject and giving the essentials of care and technic in a nutshell, it supplied a reliable and long-felt want. Although we cannot agree with the author in a few of the minor details, we approve most heartily of all the major points and in welcome this present sixth edition, with its few changes and additions. We hope it may be received with as much enthusiasm and prove as true a friend to the young practitioner and obstetrical nurse of today as have the previous editions. CHESSMAN.

Arteriosclerosis: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment. By Louis M. Warfield, A. B., M. D., Instructor in Medicine, Washington University Medical Department, etc. With an introduction by Professor W. S. Thayer, Johns Hopkins University. Eight original micro-photographs. 171 pp. Cloth. C. V. Mosby Book Co., St. Louis, Mo.

In this work the author has given a review of our knowledge of arteriosclerosis. It does not contain any original views or experimental researches on the subject, nor is it an exhaustive treatise. It is a practical, suggestive, clinical monograph, emphasizing those features of most importance for the practising physician. The author lays much stress upon the insidious development of arteriosclerosis, on the one hand, and the comparative futility of treatment when the disease is fully established. He, therefore, exhorts the public to make routine visits twice yearly to their physicians so that the disorder may be discovered in its incipiency and, by altering the diet and habits of the patient, be averted or delayed. The author affirms that high blood pressure is not a necessary accompaniment of arteriosclerosis but, if renal disease can be excluded, splanchnic or aortic sclerosis is to be suspected. He is a firm believer in mental strain as a cause of vascular sclerosis, and also overeating. His chapter on etiology does not throw any new light on the subject, although the internal secretion of the infundibular portion of the pituitary body is shown to increase vascular tension like adrenalin. Alteration of the retinal vessels is often the first sign of the disease and oculists have the responsibility of this and should refer the case to the internist for treatment. Cardiac hypertrophy, accentuation of the aortic second sound, thickened arteries and heightened blood pressure are regarded as the cardinal signs. The book is well worth the reading. The illustrations are excellent and the size of the book convenient, but the paper and binding could be improved. WINSLOW.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, M. D., Professor of Dermatology in the Philadelphia Polyclininc, etc. Full illustrated. 545 pp. Cloth, 9¼x6 in. W. B. Saunders Co., 1908.. Philadelphia and London.

This book is in many respects an admirable exposition of the science of the subject. From a large experience in the hospitals and clinics in one of our great medical centers, the author does not burden the reader with platitudinous statements regarding pathology and treatment, but offers excellent advice on these subjects from a long and tried experience at the bedside. Every consideration is given to the problems of diet and nutrition, of metabolism and elimination. Dermatology is not merely a knowledge of ointments and their application, but a profound and philosophic study of disease in which the skin participates and which is very often our great guide to correct diagnosis in diseases of the blood, the viscera and the nervous system. The section on the exanthemata is admirably treated. The internist will find many wrinkles which the dermatologist observes and which he does not. The author has written a number of well chosen formulae as a guide for the general practitioner. Linguistic scholars will thank Dr. Schamberg for his painstaking study of dermatologic terminology, giving the original Greek, English, French and German, with various popular synonyms. LENSMAN.

Obstetrics for Nurses. By Joseph Lee, M. D., Professor of Obstetrics in the Northwestern Medical School, Chicago. Third revised edition. 12mo. of 512 pp., fully illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $2.50 net.

This is one of the most successful books for nurses we have ever seen. The writer in his introduction says "that of every 200 women who become pregnant, at least one dies, and nearly one-third of the blind people in the world have lost the lights of day because of the ignorance or the carelessness of the attendants at the time of birth."

The author then goes on to urge the necessity of more enlightened nurses to secure a more enlightened public that obstetrics may be conducted along surgical lines. Fortunately, there is an accepted procedure and uniformity in treatment in obstetrics which scarcely obtains in any other specialty. For this reason it is easier to lay down specific rules for the student or nurse. In this book there are many practical points of much interest for the general practitioner, as well as the nurse, and also one finds some rather surprising information. Thus the fetus "sometimes has hiccup and it sucks its thumb in the uterus. * * * The women say they can distinguish regular attacks of hiccups. * * * Often the infant stretches, and the mother gets to know its habits, which may correspond with those after birth." Among useful practical points are the methods of applying adhesive plaster for varicose veins, and of massage for engorgement of the breast. The writer has shown fine discrimination in his choice of matter suitable for nurses and has expressed himself clearly and forcibly, in which he is assisted by many good photographic plates. The work is most excellent and deserves its place as the general accepted text book on the subject in use in the training schools throughout this country. WINSLOW.

Pathological Technique. Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M. D., Associate Professor of Pathology, Harvard Medical School; and J. H. Wright, M. D., Director of the Pathological Laboratory, Massachusetts General Hospital. Fourth revised edition. Octavo of 480 pp. Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $3.00 net.

The new fourth edition of this successful work has been revised and brought up to the teachings of the present time. It is a most practical guide on pathologic technic, meeting the wants of practitioners who have occasion to do general pathologic work. In it will be found directions for the performance of autopsies, the preparing of various culture-media, the methods of obtaining and growing pure cultures, animal inoculation and the most recent histologic methods which have stood the test of time and trial. The authors have described quite fully the preparing of Wright's blood stain, the gelatin-formaldehyde method of imbedding uterine scrapings, a rapid and inexpensive method of obtaining frozen sections, media for the differential diagnosis of typhoid bacilli, methods for demonstrating spirochaete pallida in smear preparations and the preparing of Sir A. E. Wright's bacterial vaccines. SIMPSON.

The Exploits of a Physician Detective. By Geo. F. Butler, M. D., Professor of the Department of Therapeutics and Professor of Clinical Medicine, Chicago College of Medicine and Surgery. Clinic Publishing Co., 1410 E. Ravenswood Park, Chicago.

This is a collection of detective stories, in which the central figure is a physician who extracts truth from his victims by fixing them with a wondrous hypnotic gaze. There may indeed be an impalpable suggestion of Conan Doyle in the stories, but there is as much difference between the titled master and his pupil as between their relative positions in the world of letters; one is knighted and the other benighted. The paper is cheap, the print is blurry, and the cuts can only be described as atrocious. The style is mediocre, the English feeble, the matter thin and crude, the plot halting, and the cumulative effect literary nausea. Altogether, the work reflects no credit upon author, publisher, or medical profession. WINSLOW.

Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, A. M., M. D., Professor of Laryngology in the University and Bellevue Hospital Medical College, New York City; Member of American Laryngological, Rhinological and Otological Society, etc., etc. Fourth edition, revised and enlarged. Illustrated with 126 engravings and 7 colored plates. Cloth, 604 pp. Lea & Febiger, New York and Philadelphia. 1908.

This is a handy little book. The appellation "hand-book" would be very correct. There is nothing new in it and the revision for the fourth edition is practically the same as the "revised edition" of the second and third. Everything in it is good, concisely put, and shows the practical conclusions of a careful observer. Coakley does not deal with fancies and theories, but goes at his writing as he does at his work. The arrangement of the chapter on therapeutics is nicely handled. Perhaps the best part is that which treats of the diseases of the larynx. It would be well for all study books to be printed upon paper with no glaze. There is nothing so tiresome and more injurious than to compel the student to stand the bright reflex of a shiny paper. BURNS.

Gonorrhea in Women. By Palmer Findlay, M. D., Professor of Gynecology, University of Nebraska. C. V. Mosby Book & Publishing Co., St. Louis, Mo., 1908.

English and American literature is not very rich in monographs on this subject. The author has collected an excellent bibliography of continental and American literature. Above all authorities, he exalts the noble work of our great American authority on venereal disease, Prince Morrow. The social danger is portrayed, as well as the important economic factor, whereby 20-30 per cent. of blindness in the United States is contracted by the new-born infant during parturition. These complications are the terrible afflictions which Morrow brought to the notice of the lay-world, and for which the profession will everlastingly remember him. Dr. Findlay, while writing primarily for the gynecologist and general practitioner, has a great deal of information of importance to the sociologist and the municipal sanitarians. We hope that the little book will find a welcome place in the physician's library. LENSMAN.

A Text Book of Diseases of Women. By Chas. B. Penrose, M. D., Ph.D., formerly Professor of Gynecology in the University of Pennsylvania. Sixth revised edition. Octavo of 550 pp., with 225 original illustrations. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $3.75 net; half Morocco, $5.25 net.

Penrose's book, now in its sixth edition, demonstrates the popularity which this splendid work on gynecology has attained. It is strictly a text book, and the medical and surgical advancements are noted. The book is concise as regards its pathology. The absence of a pathologic display is, indeed, beneficial to the student, as too much is generally confusing. The latest treatment is also noted. The illustrations are few, but complete. The author, in his description of operations, makes them ideal in their simplicity. The general arrangement is excellent. O'SHEA.

NORTHWEST MEDICINE

THE JOURNAL OF THE
WASHINGTON STATE MEDICAL ASSOCIATION.

February, 1909

ORIGINAL CONTRIBUTIONS

INTESTINAL PUTREFACTION AND ITS RELATION TO INDICANURIA.*

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During recent years an enormous amount of work has been directed to the problems of metabolism, yet our knowledge of these processes is in its earliest infancy.

Putrefactive processes in the intestinal canal play an important part in this study and no subject of internal medicine commands greater interest or demands greater study. Here conditions for the development and elaboration of poisons are realized, the temperature is favorable, nutrient media in the form of nitrogenous substances already peptonized are abundant. The products of their metabolism are regularly removed. Here, also, both aerobic and anaerobic conditions prevail and it is not surprising that a rich formation of these organisms is found and that they cause numerous forms of decomposition.

Physiologists have wondered at the meaning of these myriads of micro-organisms. By some it has been maintained that they are necessary for the proper growth and development of the body through their proteolytic or carbohydrate splitting properties, but it has been shown by Thierfelder and Nuttal that guinea pigs, fed on sterile food, lived and increased in weight. Levin observed that various polar animals have no bacteria in the intestinal contents. Even in temperate climates the parrot is comparatively free. It has been supposed that they aid in the digestion of cellulose, but Bergmann and others have demonstrated the presence of enzymes in lower animals which destroy cellulose.

While bacterial invasion of the digestive tract is unavoidable, since it occurs with the swallowing of the first bubbles of air and frothy saliva, under normal conditions the predominating types are saprophytic and they, by exhausting the nutritive pabulum or formation of by-products, give rise to conditions which are unfavorable to the growth of more harmful species, whose entrance into the tube cannot be prevented. In this we have the most rational explanation of the myriads of colon bacilli which are found in the intestinal tract. Under normal conditions prevailing the colon bacillus is of relatively low virulence, as has been shown by experiments of Dryfuss and others, but alterations of this normal condition are soon followed by an increase of its pathogenic powers.

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*Read before the Idaho State Medical Association, Boise, Idaho, Oct. 8-9, 1908.

Fermi and Salto, from the results of their investigation, conclude that any abnormal condition of the intestinal mucous membrane almost invariably increases its pathogenic activities. Beinstock (*Arch. f. Hyg.* XXXIX—390), upon definite experimental evidence, insisted upon the inability of the B. coli and other facultative anaerobes to attack native proteids, and that the obligate anaerobes, like B. putrificus, B. aerog. cap., etc., do and are thus capable of initiating putrefaction. The importance of this statement is readily seen when we consider that the obligate anaerobes are incapable ordinarily of liberating indol, but that the B. coli do; consequently intestinal putrefaction with indol production must be produced by the B. coli acting upon the products of anaerobic activity or upon the products of normal proteolytic digestion.

The indol producing property of the B. coli is a well-known fact among laboratory workers and constitutes one of its chief biochemical properties. It has been found that normal pancreatic digestion does not proceed beyond the production of amido-acids, leucin, tyrocin and others. Putrefactive fermentation causes still further decomposition, with the production of certain bodies, phenol, skatol, indol, etc., belonging to the aromatic series. Carbon dioxide, ammonia, hydrogen sulphide and Marsh gas, also certain acids are formed. Of the bodies belonging to the aromatic series, indol is the one with which we are chiefly concerned.

Baumann showed many years ago that this substance is found in the large intestine in the course of putrefactive processes. He also showed the absorption of indol is followed by the appearance of indican in the urine. It has since been demonstrated beyond a question of a doubt that indol is produced always and only by bacterial putrefactive decomposition of the proteid elements of the food stuffs. It has also been shown that animal proteids are more likely to undergo this change than are the vegetable class. Hoppe-Seyler and his pupils were of the opinion that indol was produced in the intrinsic proteid tissues of the body, as well as from the extrinsic proteid contained in the food; but Ellinger found in starving animals, who could be prevented from eating their own feces, the indican reaction disappeared as death approached, and it therefore could not be formed during proteid metabolism. Senator sought indican in the urine of the newly born and did not find it, nor did he find indol in the meconium.

Herter found that the injection of pure cultures of colon bacilli into the jejunum of dogs was followed by an increase of the indican reaction of the urine. The significance of the indol produced during putrefaction in the intestine depends upon its absorption into the organism through the intestinal wall. Here considerable discrepancy exists. The feces may contain much indol and, owing to imperfect absorption, the urine may contain only moderate quantities of indican. Conversely, the urine may contain much indican and the feces only a moderate quantity of indol. In the human intestine, under normal conditions, the indol formed as a consequence of putrefaction of proteid food is split and one portion eliminated by the feces, while the other is resorbed and oxidized. Finally, probably in the liver, the absorbed portion becomes synthetized with sulphuric acid and is excreted by the kidney combined wtih potassium salts, principally in the form of the indoxyl-sulphate, known as indican, which on further oxidation yields indigo. Since it is in the liver mainly that indol is converted into conjugated sulphur compounds in hepatic inadequacy, they are diminished in the urine.

Reaction. For the determination of urinary indican the following method, proposed by James W. Holland (*J. A. M. A.*, 48 page 1942), is the one made use of in this laboratory. For simplicity and uniformity of results, it has proved most useful.

To 5 cc. of urine an equal quantity of concentrated hydrochloric acid is added to liberate the indoxyl-sulphuric acid or urinary indican and then as oxidizer 3 gr. tablet of sodium perborate. The mixture, which immediately effervesces briskly, is gently agitated to dissolve the perborate. The urine promptly deepens in color and if the amount of indican be large, turns faintly blue. To concentrate the color, 2 cc. of chloroform are added, the tube closed with thumb and the contents gently shaken for at least two minutes. The chloroform separates at the bottom as a layer varying in depth of blueness with the proportion of indican. Some pathologic urines yield a layer almost black in color.

In the presence of the indican reaction, we have a reliable index of the absorption of putrefactive products, although a negative reaction does not by any means signify an absence of these conditions since, according to the brothers Salkowski, both skatol and indol result from a common substance preformed in albumin which, when decomposed, at one time yields a larger amount of indol, and at another time a larger amount of skatol, according as to whether the hypothetical indol-bacterium or the skatol-bacterium active under such conditions prevails in the development.

Here it should be mentioned that, beside the indicanuria of intestinal origin, there is produced indicanuria secondary to putrid empyema or putrefying fetus in utero. These conditions are usually recognized by other means and are readily separated.

The fact that considerable quantities of indican is found in the urine of persons apparently healthy has been urged as a reason for minimizing its significance. There could be no greater fallacy. The absorbed products of intestinal putrefaction under normal conditions of cell activity are rendered innocuous by some process of detoxication. This may include oxidation, conjugation or reduction, and lastly elimination. Some substances that cannot be detoxicated are rendered harmless if promptly eliminated.

As previously pointed out, indican or indoxyl-sulphate of potassium is the oxidized and synthetized product of indol and is of itself a manifestation of the defensive action of the body in protecting the organism from the noxious effects of indol. Skatol is eliminated as skatol-sulphuric acid. Phenol as phenol-sulphuric acid. The protective value of oxidation is well demonstrated in the interesting experiments of Drs. Richards and Howland, who administered hydrocyanic acid, which is known to reduce oxidizing processes, to animals, following which injections of indol and phenol were made and almost uniformly the convulsive twitching characteristic of indol and phenol was of longer duration and more marked in the animals injected than in the controls.

Many substances that, in relatively small quantity, are tolerated by the body without the production of harm in "large doses," rapidly introduced produce such inhibition of normal metabolism as to constitute an injury. That "the lining cells of the body, especially the hepatic renal and epithelial cells of the intestinal tract," are barriers in preventing the rapid introduction of "large doses" of poison into the system is shown by the experiments of Herter and Wakeman (*Jour. Exp. Med.* IV. 307, 1899), who demonstrated "that these cells have the power of absorbing considerable quantities of indol as well as phenol and tying them loosely in such a way that these bodies cannot be recovered by distillation."

The remarkable fact should yet be mentioned that putrefactive processes after the development of phenol, indol, skatol, etc., are inhibited after a certain degree of concentration by reason of the production of certain excrementitious products which react upon the organism, limiting their activity or even causing their death.

Conditions favoring putrefaction. Two important conditions favoring intestinal putrefaction are: first, over-eating; second, faulty innervation, leading to disturbances of motor and secretory function. Over-eating is particularly pernicious. If more food be ingested than can be digested and assimilated, it is passed on to the region where putrefactive bacteria prevail. In retarded resorption the passage of large quantities of hydrolyzed proteid greatly facilitates the perpetuation of bacterial decomposition in affording fare of the most nutrient character. In this relation, I think the mistake is often made of over-feeding tubercular subjects. Intestinal putrefaction is common in this disease as a result of "forced feeding." The digestive secretions are usually deficient and an actual inflammation often present. Examination of the stools reveals an abundant residue, consisting of undigested starch and muscle fibres. Indican may or may not be present, depending upon the indol producing ability of the putrefactive organism. Disturbances of the motor powers leading to stagnation of the intestinal contents favors putrefaction by allowing an upward migration or prolonged action of putrefactive organisms. Oftentimes the miscarried action of a cathartic is followed by flatulence, increase of indican, etc. Explanation of this is sought in the fact that the cathartic causes the passage of native proteids and possibly peptones from the small to the large intestine, where putrefaction occurs.

In constipation, stagnation of food remnants in the colon would cause no indol production under normal conditions of digestion, unless masses of undigested or hydrolyzed proteid entered this region. Even if undigested proteid did reach the lower bowel, indol production would not take place except in presence of anaerobes which are necessary to initiate putrefaction of native proteids.

The normal acidity of the gastric juice is efficient in destroying, or at least inhibiting, the growth of many organisms, consequently in hypo-acidity, this influence is removed. Any condition leading to disturbed innervation reacts upon the secretions, important among these being mental and physical strain and fatigue.

Manifestations. It is plain that the "normal defenses" are of greatest importance for the body. However, if the products of putrefaction absorbed are great, remain in the body, or are continued for a prolonged length of time, the protection provided is inadequate, there follows a "failure of compensation," consequent intoxication with manifestations truly characteristic.

Inroads on the general metabolism are soon apparent and in long continued cases there is loss of weight, subcutaneous atrophies of fat producing a wrinkled condition of the skin, and changes usually coincident with premature senility and the phenomena of old age. These patients complain of fatigue after the slightest exertion. Physical prostration and inaptitude for work are marked.

With the advent of putrefaction there is a simultaneous production of gas. This goes hand in hand with the fermentative process, thus leading to abdominal distention and flatulence. While putrefactive decompositions are usually limited to the large bowel and lower ileum, there is under some circumstances gas accumulations in the small intestine, and in some cases indol production and subsequent indicanuria. For instance, the most intense grades of indicanuria are seen in incarcerated hernia, and intestinal obstruction, where it is of considerable diagnostic import, since the higher up the obstruction, the greater the indicanuria. However, it is said not to occur in obstructions in or above the jejunum.

If the decomposition results in the production of butyric acid, it acts as an irritant to the bowel and diarrhea results. Constipation or even normal activity may exist, and these cases are often associated with excessive indol production which is not irritating to the bowel and are, I think, more often associated with signs of intoxication.

Nervous System. The variety of symptoms referable to the nervous system would lead one to believe that it is particularly susceptible to the poison. Early among these are debility, usually of a neurasthenic character, weakness and mental dullness. Sensations of drowsiness are constant and, though the patients feel drowsy and sleepy, they are poor sleepers, they roll and toss in bed and are often awakened by horrible dreams. Pain, when present, is either of a rheumatic or a neuralgic character. The rheumatic pains simulate muscular rheumatism. Then, again, from its localization deep in the back, patients are lead to believe the existence of some renal disturbance. However, examination of the urine reveals a normal content except for a great increase of indican, and possibly a few cylindroids, which I attribute to renal irritation. Headache is common and should always arouse the suspicion of intestinal putrefaction. All of us have seen the prompt relief of a headache by the simple unloading of the bowels.

There is no doubt the post-operative elevations of temperature bear an important relation to the toxins generated in the bowel, a strong argument in favor of this fact being the usual disappearance in the absence of septic conditions, with the first movement of the bowels. The physic phenomena of intestinal putrefaction are interesting, and are represented by feelings of depression, melancholia, dread, fear and even delusions. Many cases of migraine are accompanied by the most intense grades of indicanuria, and the fact that under treatment an improvement of the condition is usually associated with a disappearance of indican points strongly to intestinal putrefaction as an etiologic factor.

Neurologists contend that a number of functional nervous disorders result from fecal toxemia. It has been shown from a clinical standpoint that some forms of insanity are undoubtedly caused by auto-intoxication from the intestines. Church and Peterson state that, "we do not yet know how frequently auto-intoxication from the absorption of intestinal poisons determines insanity, but the facts thus far collected point to this origin of a considerable number of cases."

Circulatory System. The pulse may be slow and full or rapid and feeble, depending upon the degree of intoxication. Frequently the heart is very excitable and the patients complain of spells of fainting or sensations of suffocation. The moderate grade of anemia present in some cases is to be attributed to hemolysis. It has been shown by Herter, by experiments, that some organisms of intestinal putrefaction possess considerable hemolytic properties.

In pernicious anemia, after the exclusion of the forms associated with pregnancy and parturition, atrophy of the stomach and parasites, there remain a large proportion, the etiology of which is not clear. Quincke suggested that the condition is probably due to increased hemolysis. This has been supported by the observations of Hunter, who attributes the hemolysis to the absorption of poisonous material developed in the condition of faulty gastro-intestinal digestion. Osler concurs, in that certainly the evidence is very strong.

In arteriosclerosis, there is ample support for the thought that the influence of syphilis has been greatly exaggerated, and that many arteriosclerotic conditions attributed to this source are in reality due to the prolonged continuous influence of toxins absorbed from the alimentary tract.

Kidneys. There is good reason for the belief that the continued influence of toxic materials from the bowels for prolonged periods of time may cause renal lesions in the effort of these organs to eliminate noxious substances. It is a matter of common knowledge that the classical picture of chronic interstitial nephritis is preceded months or years, by the clinical features of arteriosclerosis, accentuation of second aortic sound, arterial hypertension, etc., important among the etiologic factors of this condition being the intoxications.

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ON THE EXAMINATION OF THE STOOL AND ITS CLINICAL SIGNIFICANCE.*

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Were it not for the fact that stool examination is but little understood and still less practised by the average physician, and that a distinct advance in the treatment of certain so called "chronic dyspeptics" has been made possible by the systematic study of the stools from test diets, I would not have attempted in response to the request of your President for a paper along this line of medicine, to write on so general a subject or try to review so many points in the time allotted. But if I can impress upon you the importance of the subject as now viewed in the light of the recent work of certain clinical investigators, and awaken somewhat an interest in it, which the latter well deserves, I shall be satisfied.

It has been many years since, by the introduction of the stomach tube by Kussmaul, and its adoption in diagnosis by V. Leube, and the use of the test breakfast and test meal by Ewald and Riegel, the first real progress was made in the diagnosis of stomach diseases, especially the differentiation between the functional and organic affections.

The obtaining of similar information of the intestinal tract presented many more difficulties. The factors entering into intestinal digestion were more hidden and the bowel, aside from the rectum, did not lend itself to direct methods of examination. Consequently the bowel function had to be determined clinically, as that of the kidney is determined, by analysis of its product. Chemical examination of the stool, which concerns, for the most part, fat, total nitrogen and dissolved albumin content, did not lead to distinct practical helps in diagnosis. The macroscopic and microscopic examination of the ordinary stool gave more information, and this led to the study in like manner of stools from definitely weighed and prescribed diets.

We are indebted to Adolph Schmidt for the introduction of the definite test diet and its part in the determination of certain factors of the intestinal function. Numerous modifications of this diet have been advanced since its publication in 1904, the most noteworthy of which being the test beads of Einhorn but, I believe, without advantage. I first learned these methods in Schmidt's wards of the city hospital, in Dresden, over two years ago. Since then I have employed them in both private and hospital practice with much satisfaction to myself and without meeting with the numerous objections raised by the various writers who have tried to simplify them. Patients who really suffer distress enter quickly into the spirit of the investigation and carry out the details of the diet, whether in the home or the hospital, with willingness and care.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

The principles upon which the diet was based were: (a) It should contain in as simple a way as possible the elementary foods in definite amounts and of average calory content; (b) The same diet should be employed each time under like conditions; (c) No foods should be allowed which would give remains that could not be recognized as such in the stool. In the healthy state this diet affords a stool of fairly known composition. With this normal stool the abnormal is compared.

Its composition, as I have used it, is as follows in terms of amounts for twenty-four hours: 125 grms of Hamburger steak, lightly broiled, with the connective tissue quite raw, and without vegetables; 200 grms well cooked mashed potatoes; 50 grms of butter; two soft or raw eggs; 1 l. of oatmeal gruel made with milk and strained through gauze to remove coarse particles; 1 to 1 1-2 l. of milk; 100 grms of stale or toasted bread or zwieback; and water, salt and sugar as desired. For a portion of the oatmeal corn meal gruel may be substituted. Also, if milk is not well borne, cocoa may replace a portion of it. Of late I have also allowed a little clear boullion or consomme if the patient desires. This amount of food is divided into meals and eaten for three or four days and the stools passed on the third and fourth days are saved for examination.

In case of actual constipation small doses of phenolphthalein may be given. The stool collected in a glass jar is brought to the laboratory as soon as possible. It is then roughly stirred with a spatula and a portion the size of a walnut is ground up in a mortar with water which is added drop by drop, until it is of fluid consistency, when it is poured onto a black plate or into a large petri dish. By the macroscopic examination is the consistence, color, form and odor of the stool determined and also the presence or absence of mucus, undigested connective tissue, meat and potato. Foreign substances as evidences of parasites, stones, etc., are likewise to be found thus. Microscopically it is examined as routine in three preparations, native, strained with Lugol's fluid and heated with 20 per cent. acetic acid.

Nuclein digestion is best determined by having the patient swallow small bits of lean meat enclosed in small silk net bags. These are recovered and the remains of the meat may be stained with methylene blue in teased preparations. Chemically only the reaction, the sublimate test and the fermentation test of Strasburger are of practical importance. The bacteriology of the stool does not concern particularly intestinal test diets. In the sacharo-butyric putrefaction of Herter, an excess of B. aerogenes capsulatus is found. Rosenberger has recently emphasized the importance of searching the feces for the tubercle bacilus in obscure tuberculous infections, and Rudolph Schmidt lays much stress upon the finding in the same of the lactic acid bacillus and sarcinae, in malignant and benign stenosis of the pylorus respectively.

Mucus in the stool is always pathologic. When it is of finely disseminated type it comes from within the small bowel or the upper part of the colon or from both. One cannot differentiate this. Distinct intestinal catarrh may exist without the presence of mucus in the stool, for it may be digested and absorbed when its point of origin is high in the intestine. Raw connective tissue owes its digestion, in large measure, to the presence of free hydrochloric acid in the stomach. The finding of considerable quantities in the feces points almost always to an achylia gastrica; though not always, for certain of these cases, probably by reason of an active bacterial digestion, as Einhorn and Steel have each suggested, do not show connective tissue in the stool.

Again in three patients, whom I have under observation now, in whom normal stomach ferment relations exist, fairly abundant connective tissue remains are found. Nevertheless, the former statement holds true in the main.

Distinctly striated muscle fibre, occurring in excess in the stool, signifies a disturbed intestinal digestion. It usually is associated with a chronic intestinal catarrh or pancreatic disease. A true intestinal dyspepsia concerning meat digestion alone is not common. Schmidt, in a recent review of his work before the 25th Congress for Internal Medicine, held in Vienna last spring, emphasized this fact strongly. Remains of potato, staining blue with iodin, may appear in the feces as the result of a purely functional intestinal disease. This will be mentioned later.

Fat stools appear in the following conditions and the fat may exist as an excess of fatty acid or soap crystals or as neutral fat: (a) Decreased bile excretion or obstruction to its outflow. Icterus usually coexists and there is little or no hydrobilirubin present in the stool. (b) Disturbed pancreas secretion. The fat exists frequently as neutral fat drops and there is often considerable undigested meat. (c) Disturbed intestinal digestion. This is not common. Fat absorption may be impaired in case of intestinal tuberculosis or severe amyloid disease. Salomon has stated that a purely functional intestinal dyspepsia concerning fat digestion occurs. However, it is very rare and can only be justifiably assumed in the absence of the other two.

Unchanged blood cells do not appear in the stool when the site of hemorrhage is higher than the splenic flexure of the colon, unless the hemorrhage is very profuse, and seldom higher than from the sigmoid. This point is important. The finding of occult blood is best done by means of the benzidin test. In order that this be reliable the patient must have lived on a meat free diet for from two to four days.

The passing of unchanged bilirubin in the stool, as determined by its green reaction with a saturated bichloride solution, is pathologic. It means a too rapid passing of the bowel contents or an absence of the normal reduction processes which change it into hydrobilirubin. The latter stains red with the sublimate solution. When both reactions are absent from the stool there is generally present an absolute closure of the common duct.

The reaction of the normal stool from the test diet is neutral, faintly acid or seldom very faintly alkaline. A distinct acid reaction occurs most frequently with faulty starch digestion, due to an excessive formation of butyric acid. A marked reaction for fermentation usually accompanies it. The stool may be filled with bubbles apparent to the naked eye and smell strongly of butyric acid. An alkaline reaction is the result of intestinal putrefaction, which may or may not be associated with the presence of indican in the urine. It also accompanies more or less gas formation, as determined by the Strasburger method.

In the study of chronic intestinal diseases, especially by the acid of stool analysis, one is impressed with the close interrelationship of functional and organic affections. There exist primary functional intestinal diseases, which more frequently are associated with secondary organic changes than without. There are also primary organic bowel affections accompanied by distinct functional disturbances of digestion. Again, the bowel function is frequently found disturbed by reason of primary disease on the part of its closely related neighbors, the stomach, pancreas and liver. The primary trouble in these cases also may be organic or functional in nature. In some instances it is quite impossible to say which factor, organic or functional, is primarily at fault.

On the part of the stomach the absence of hydrochloric acid, whether of functional or inflammatory origin, may lead to a distinct connective tissue lientery, frequently associated with spastic obstipation and chronic catarrh.

A man of 46 years had suffered for 24 years with alternating constipation and diarrhea, general soreness through the bowels and periodic colic. His stomach contents revealed an absence of free hydrochloric acid, total acidity 2, rennet-zymogen 0, lactic acid 0, no chymification, no mucus and no distinct motor insufficiency. Stools from the test diet were a mesh work of raw connective tissue. They were faintly alkaline and had some fine mucus. All other foods were well digested. On a selected diet he has been perfectly well for over a year.

Constipation may exist and be of gastrogenic origin. It is usually incident to a hyperacid state rather than to a hypoacidity.

The Sahli glutoid test is valuable only in a negative way. The Cammidge test for the urine may prove to be of distinct value when it is better understood. The fact first noted by Schmidt and Wallenfang that nuclein is only digested by pancreatic juice is experimentally correct. The intestinal flora destroys nuclei, however, if they remain moderately long in the intestinal tract; and other factors, as the presence of an excess of organic acids, seemingly influence their digestion. Nevertheless, Schmidt discribes an achylia pancreatica of purely functional origin. We know from the experiments of Pawlow that the acid chyme produces the natural stimulus for the flow of pancreatic juice. If this stimulus fail, it is reasonable, according to our present knowledge, to expect an insufficiency of this organ. Schmidt claims the proof of this lies in the finding of undigested nuclei in macroscopic pieces of meat in the stool. As a rule, remains of all types of food stuffs, even neutral fat, and considerable mucus are present. Many "nervous diarrheas," so called, are believed to be of pancreatic origin. The use of pancreatic digestants, as pancreon, have in certain cases been attended with beneficial results.

Intestinal disturbances on the part of the liver have to do only with obstruction to the outflow of bile and concern only fat absorption. With a total exclusion of bile from the intestinal tract, from 25 to 50 per cent. of ingested fat may be voided in the stools. Secondary inflammation of the intestinal mucous membrance rarely appears, for the reason that these stools do not putrefy and the total number of bacteria contained, according to Strasburger, is much reduced. This is the reverse of fat stools from pancreatic and intestinal lesions. Our oft heard term "biliousness" seemingly has no relation whatsoever to liver function. Such attacks are probably mild, acute, intestinal dyspepsias or acute exacerbations of chronic forms.

To a most interesting group of intestinal diseases belong those primary conditions of the intestinal tract which are characterized by disturbance of the intestinal function, the so-called true intestinal dyspepsias. Either the functional or the organic factor may be primary, so that a close interrelationship of the two is frequently seen.

From the nature of the food stuffs concerned, it is logical to speak of two large types of these affections: (a) Those concerning all food stuffs, a condition that is surely very rare and so far as I know unknown as a primary condition. (b) Those concerning one or more classes of foods. The most important of the latter group is the "fermentation dyspepsia" (Garungs-dyspepsie) first described as a disease entity by Schmidt and Strasburger.

A man of 40 years consulted me for the relief of general distress and periodic colic in the abdomen. He had suffered thus for three years, though his first severe colic appeared in November, 1907. His stools are always soft, with more or less flatus, but no special bloating. Apples, certain vegetables and beer distinctly make his distress worse. Physical examination is quite normal. The corneal reflexes are absent and the deep ones active. The stomach and urine analyses are normal. The stool from the test diet is semi-diarrheal, yellow, filled with bubbles and smells strongly of butyric acid. It is acid in reaction, gives a strong reaction for fermentation and has much undigested starch which stains blue with iodin. There is a little fine mucus present, showing the presence of slight catarrhal change, but all other foods have disappeared.

The attempt has been made to establish an intestinal "putrefaction dyspepsia" as a functional disturbance of proteid digestion, similar to that of the carbohydrates. This has been partly assumed in the past to be the case, but certain facts point strongly to primary organic changes in the mucous membrane of the bowel, rather than to a secretory neurosis. The presence of much connective tissue and meat fibre in the stool, without the products of secondary inflammation, does not cause putrefaction, nor is the bacterial contents much increased. Schlossmann has shown that dissolved albumin in the stools of the adult comes only from the bowel wall and not from undigested foods. In as much as those cases of supposedly proteid indigestion which have been studied in this way do show dissolved albumin in the feces, it has been deemed probable that a primary intestinal catarrh exists high in the bowel and all evidences of mucus and desquamated cells have been reabsorbed. It is possible that some of the "nervous diarrheas" will be found to be of this nature.

One word in regard to that always mistreated bugbear, namely, habitual obstipation. If one studies the stool from the test diet of a patient suffering from severe atonic obstipation, he is impressed with the noticeable absence of oatmeal hulls, fatty acid and soap crystals contained in it. Not only is the water content reduced and the stool hard, small and dry, but also are the fat and cellulose remains equally reduced. There may not be a single empty potato cell to be seen with the microscope. In other words, there is, as Schmidt has said, a too good digestion, a digestion even of much cellulose. The natural stimuli to intestinal peristalsis have, therefore, been removed. Ordinary vegetables, fruits, etc., do not correct the condition because they do not form a sufficient pulpy, water containing stool. The solution has been, to a certain extent, found in the use of agar-agar and its preparation, "regulin," which produces a large, soft, pulpy stool that does not irritate even the spastic colon. Let me cite one typical example.

A man of 65 years had suffered for some years with an obstinate constipation, attended with some periodic vomiting and of late with dizziness. His stools were always small, hard and dry, often not voided for days at a time, and then only by means of copious colonic flushings. He never suffered pain. He had used cathartics for years, had employed massage, electricity, etc., but without avail. Within a week after beginning a diet containing bran, much water and agar-agar he was voiding one soft stool each day and his dizziness had disappeared.

In conclusion, let me impress upon you that in general the important factor in the treatment of these various ailments is the diet. And the respective diet is selected according to the indications as found by stool analysis. Those foods that act as irritants by reason of their not being digested should be restricted or excluded, and the body nutrition should be maintained by those which are properly assimilated. There are adjuncts of treatment, to be sure, that may well be employed, and probably the most important of these are bed rest and moist heat applied locally to the abdomen. Artificial digestants are rarely of much value. Intestinal antiseptics, as salicyclic acid milk, bismuth salicylate, alphozone, etc., are of more. The pernicious use of cathartics and enemas is irrational, unscientific and productive of real harm.

INJURIES TO THE EYE AND ADNEXA.*

By H. V. Würdemann, M. D.
SEATTLE, WASH.

The Value of Vision.

"Sight is priceless." This trite axiom is generally accepted, but is subject to modification. It is recognized that any defect of vision below a certain point, i. e., a loss of 20 per cent. of visual acuity in the higher trades and 50 per cent. in the lower trades materially lessens the earning ability of the individual, the ratio being decreased in arithmetical proportion until he is incapable of earning anything, becoming a charge upon the family and community. This happens when economic blindness is reached, i. e., when the visual acuity is less than 50 per cent. of the normal. Such diminished acuity, however, is of much value to the possessor as, although he cannot work at remunerative employment, yet he may be able to get about, avoid other accidents and enjoy what little sight is left.

Some blind persons have been enabled to substitute their other senses in part for sight, notably that of touch, and become broom or chair makers, typewriters, etc., but in the case of an adult suddenly becoming blind, his previous economic education goes for naught and he at once steps out of the ranks of workers. Thus the value of vision is equivalent to the wages of the individual.

The result of the scientific estimation of economic vision shows from both calculation and examination of large numbers of working men that a certain loss of vision bears a distinct relation to the loss of earning ability.

Legal Indemnity. In legal procedure this has been arbitrarily arrived at in a fairly just manner, damages given for the total loss of sight being reasonably equitable to the prospective earning power of the individual for the balance of his life; that for one eye in proportion. These damages average from $2,500.00 to $15,000.00 for the loss of one eye to double the amounts for the loss of both.

Accident Insurance. From correspondence with all the accident insurance companies in the United States it is found that for complete loss of vision in both eyes the insured gets the full amount of his policy; for one eye from 15 to 30 per cent. Thus the loss of both eyes or of total sight being recognized the same as the loss of life.

The United States Pension office treats the subject in much the same manner, $12.00 to $17.00 per month being given for the loss of one eye; $100.00 for the total loss of sight. The various indemnity laws of England, France and Germany give much the same valuation.

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*Abridged and read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

BLINDNESS FROM TRAUMATISM.

Traumatism is a very frequent cause of blindness but, owing to the safeguards against accidents that have been thrown around working men in recent years, judging from the difference in the census reports, it is much lessened and general blindness is therefore decreasing. In manufacturing localities, however, traumatism is the cause of about 20 per cent. of cases applying to the oculist for relief.

In 1890, in the United States of America, excluding Alaska, Hawaii, Indian Territory and Indians on reservations not taxed, there were 62,622,250 inhabitants, of whom 7,134 were blind from injuries, accidents and operations, i. e., about 20 per cent. per thousand of the totally blind. In 1900, of the 75,568,686 inhabitants, excluding the same as above, there were 64,763 blind, of whom 35,645 were totally blind, 29,118 partially blind. Of these there were 6,648 totally or partially blind from injuries, accidents and operations, of whom 4,462 were totally blind, 2,226 partially blind, thus giving of the blind a percentage of 10.33 due to the above causes, a decrease of 586, despite the gain of 12,944,436 inhabitants.

It is noteworthy that the totally blind from these causes were in greater proportion, i. e., 66.7 per cent. more than the partially blind. The proportion due to accident is much greater among the males. Of the 7,134 blind in 1890 from injuries, 117 were under one year of age, 356 between one and five, 516 between one and ten years, 903 between one and twenty years, 3,024 between one and fifty years, 1,865 between one and sixty years and upwards when the injury was received; for 353 the age, when the injury occurred, was unknown. In 1900, of the 6,688 blind from the same causes, 47 were under one year of age, 250 between one and five years, 501 between one and ten years, 392 between one and fifteen, 298 between one and twenty years, 1,401 between one and thirty years, 891 between one and sixty years, 502 between one and seventy years, 48 between one and eighty and over; in 34 cases the age was unknown. It is remarkable with the increase in population that there is a lessened number of blind and a very greatly lessened number of blind from accidents.

Fieuzal found, among three hundred blind persons in Hospices Des-Quinze Vingts, 9.8 per cent. blind from injuries; Trousseau later found 16.32 per cent.; Magnus' statistics give 10.76 per cent.; Fuchs gives 7.9 per cent.

As regards blindness of one eye, naturally cases are much more frequent. The eleventh census shows 44.6 per cent. have one sided blindness. The twelfth census does not give this item. Cohn's statistics are 24.6 per cent. Glascot states that at least one-half of the number of persons blind by injury to one eye lose the other from sympathetic disease, unless the injured organ is early enucleated. Magnus gives 4 to 4½ per cent. of the cases of total blindness due to sympathetic inflammation. These statistics show the gravity of injuries to the eye and the results they produce upon the wage earner.

PROPHYLAXIS.

Safe-guards against accident to working men have been forced upon the attention of manufacturers, transportation companies and others, not only by legal measures, but by the necessity for conservation of their own goods and machinery, the loss of services and the cost of the care and expense in treatment of such working men, as well as protection from damage suits, which give the lawyers lots of work. The policy of making factory work safer and more healthful is profitable as well as humane and it makes the workman more contented. Safety appliances are in use in most dangerous trades and have markedly decreased the proportion of accidents, particularly of the eye. Note the lessened number of blind from accidents within the last ten years, according to the twelfth census. The installation of screens for iron chippers and bottle workers (Fig. 1), the forced

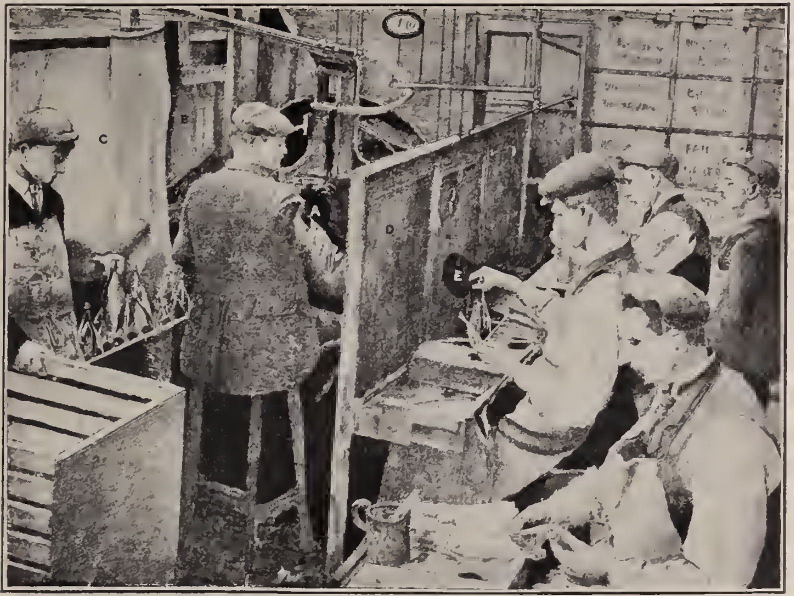

Fig. 1.
Bottling aerated waters. (Snell).
Note screens and crowded condition of works.

wearing of masks (Fig. 2), spectacles or other eye protection where flying chips of metal, glass, stone, etc., are common, has reduced the number of accidents. But though these materially insure the safety of the workman, it is with reluctance that he uses such appliances and will shirk their application unless carefully watched and frequently warned.

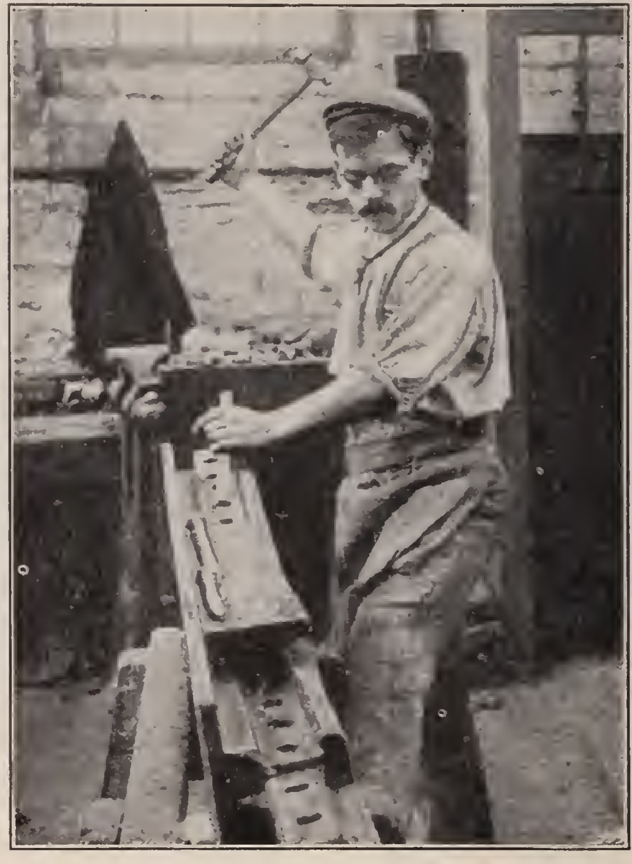

Fig. 2.
Workmen clipping iron by wearing eye protectors. (Snell.)

Where grinders or workmen (Fig. 3) in the iron trades sharpen their tools a number of times a day at the wheel, thousands of foreign bodies fly about, many of which strike the person despite safety appliances that may be used. I have in my possession a pair of ordinary spectables used by a workman in the Allis-Chalmers iron works which is completely studded with hundreds of abrasions caused by flying particles of emery, a not uncommon observation.

It is calculated by Snell that there are one hundred accidents a

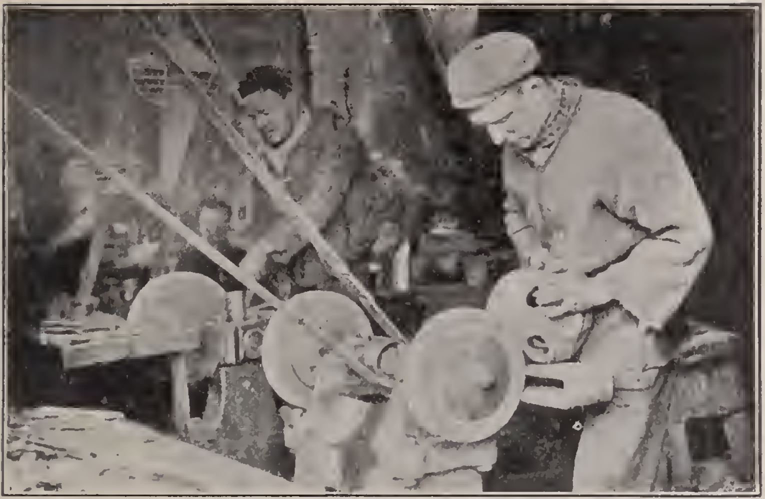

Fig. 3.
Workmen grinding. (Snell.)
Note close proximity of wheels.

year to one hundred working men, in the steel and iron industry. The majority of these are trivial, "motes" in the eye, removed at once by the workmen themselves, or by fellow workmen and do not go to the physician or oculist. Many of these fellows become expert in removing these motes, and in a large factory it is common to see such a man employed, having the other man s head up against the wall and picking out small foreign bodies (Fig. 4).

The instruments used for this purpose are numerous. Snell made

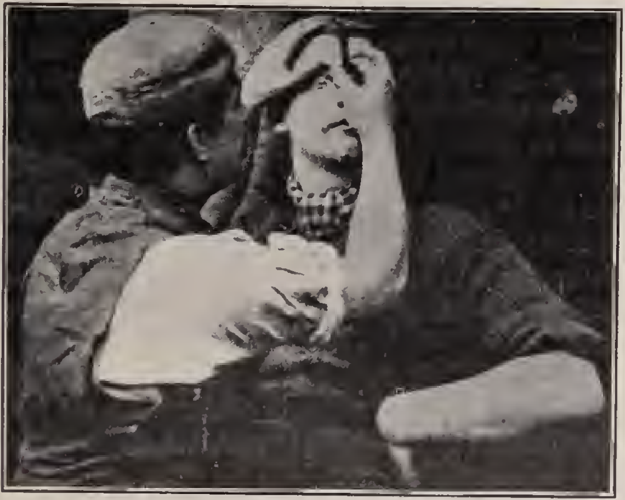

Fig. 4.
The mote removed. (Snell.)

a collection from the Sheffield works (Fig. 5). It is somewhat surprising to find that on examination these pins, needles, knife blades, etc., when submitted to bacteriologic examination give a negative report, although the knife very possibly might be used at the man's lunch and the pin put in the mouth to wet it before using it and likely to be pushed in the waistcoat, when it comes in contact with the dirt collected in the cloth. Thus it is comparatively few of these trivial corneal infections become septic. However, we do see a large number of them.

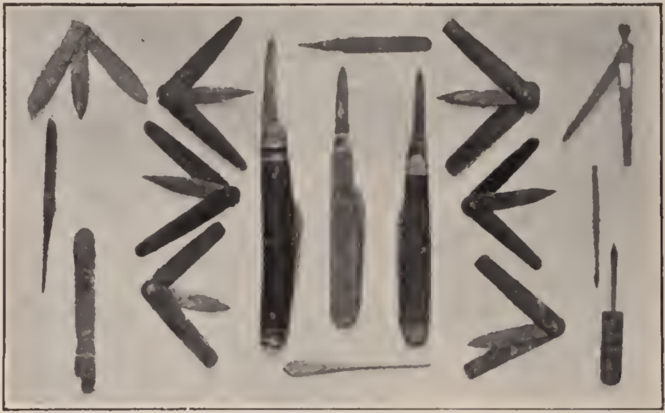

Fig. 5.
Collection of tools used by mote removers from the Sheffield Iron Works. (Snell.)

Even the most trivial injury may cause loss of sight or of the eye. For instance, a young lady was walking past a door way of a downtown building where a man was chipping at an iron sill, when a small particle flew off and grazed her cornea. Although she went to an oculist immediately, who unfortunately did not clean out the eye and put on a bandage, forty-eight hours later severe ulceration of the cornea, followed by hypopyon keratitis and ophthalmitis, set in and the eye was lost, despite radical treatment. However, it is fortunate that most foreign bodies, particularly iron chips and steel fragments, getting into the eye in trades are aseptic and, if removed shortly and the eye kept closed by a bandage, there is no great risk to the vision.

If one examine carefully the cornea in the eye of a grinder he may be surprised to find a large number of specks, which are the results of previous injuries. If these be not situated in the visual area they give rise to no inconvenience, but if in the visual axis a very small scar may cause decided lowering of the visual acuity. All such trivial accidents could be prevented by the working man wearing protection while at such forms of work. Practically all clean cut wounds, abrasions, etc., such as operative wounds, heal readily with no tendency to infection; and, as remarked, most foreign bodies of this nature are aseptic. The infection is almost invariably communicated by the working man from his finger nails or dirty handkerchief, or where ill considered operative procedures by fellow workmen in the factory, or even by physicians are done. It goes without saying that any instrument, such as a needle or spud employed to remove foreign bodies from the eye, should be perfectly aseptic.

The more serious accidents from foreign bodies occur as industrial eye injuries from explosives in mining and railway work, from the bursting of glass, of water gauges and in bottling, from foreign bodies occurring in mills, machine shops, foundries and the trades, burns and scalds from or in connection with the above pursuits, agricultural pursuits and domestic life, incidental injuries and injuries from firearms. This classification is similar to that given by Dr. Wilson Johnston, of Spokane. Many of these accidents, occurring to laboring men during their work, are to be avoided by safety appliances and screens, but these cannot be expected to prevent those that ordinarily occur to the working classes.

FORMS OF EYE ACCIDENTS.

1. Industrial injuries.
    - Blows from blunt force.
    - Burns and scalds. Fluids, molten metal, lime and chemicals.
    - Explosions. Steam, gas, gun powder and blasting injuries.
    - Wounds. Incised, lacerated, punctured, contused, occurring from the use of tools or caused by foreign bodies not retained within the eye, perforating gun shot injuries.
    - Foreign bodies. Motes, emery, iron, stone, glass, wood, copper impacted in the anterior portion of the eye. Foreign bodies retained within the eye, magnetic and non-magnetic.
    - Infections following injury.
2. Agricultural injuries of similar character, with addition of—
    - Injuries from animals, as cow horns, claws, finger nails, insect stings and insects entering the eye, spears of grass and chaff particles.
3. Domestic injuries of similar nature, with addition of—
    - Incidental "motes," abrasions and scratches of the conjunctiva and cornea, pen knife, scissors and air gun.
4. Gun shot injuries.
    - Small shot and bullets, shell explosions, sword and bayonet injuries, occurring during war, in hunting and from accidental discharge of firearms.
5. Professional or operative injuries, the untoward effects of operations.

(To be Concluded.)

MEASUREMENT OF THE X-RAY.*

By Henry Power, M. D.,
SPOKANE, WASH.

The human animal is a creature of fashion and the study of medicine does not overcome his natural bent in this direction. Thus we may see in the natural attitude of the profession toward any novelty, the same cycle of mental processes as have been ascribed to the musical world in relation to the Wagner school of German music. Their attitude in relation to X-ray work has to pass through the stages of indifference, intolerance, curiosity, enthusiasm, disgust and at last appreciation. And this is true not only of the profession as a whole, but to a great extent of the individual practitioners.

If by chance this paper will accelerate the process in a few of the members present I shall be well satisfied, for in these times, which may be called pioneer days of X-ray practice, things are not made easy for the man who tries to be well informed and he must dig most of his information out of the various half true articles he may find in medical and other technical publications.

Lord Kelvin says that the study of any set of phenomena does not become a science until the same can be measured with some degree of accuracy and the want of this, until recently, is in a great measure responsible for the failures and worse than failures in the use of the X-light, both in diagnosis and treatment.

And a moment's consideration will show that this must in the very nature of things be true for, if the light have any effect whatever, it must be possible to overdo the same and, on the other hand, to waste time by using so small a dose that the morbid process is perhaps only stimulated to greater activity of growth. And, again, the results in diagnosis are equally confusing if the nature and amount of exposure are unknown, no interpretation of the plates being possible. As an example of this, in an exposure for obtaining information upon the condition of the lumbar vertebrae it is necessary to use more light and also a greater degree of penetration than will be required where the same part of the body is exposed to investigate the bowel or kidney.

Again, one often hears the fear of an X-ray burn given as a reason for avoiding this form of examination, whereas measurement shows that the exposure necessary for a good radiograph of the thickest part of the body is only about one-twentieth part of that required to produce a burn—provided the ray of correct penetration be used.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

The Standard Dictionary defines measurement as the act of comparing with a fixed standard and, in so far as practical results are concerned, this is now possible in the case of the X-ray. It must be confessed, however, that there are at present several fixed standards, all of considerable utility but all having some important defect, and it is probable that this will always be the case, to some extent at least.

The various methods of measurement may be divided for our present purposes into those easily applied by the average medical man and those more adapted to the laboratory. It must not be forgotten, however, that these latter are more accurate and will probably in time be used to standardize the instruments in use in the doctor's office.

Thus one will buy an X-ray outfit with measuring instruments adapted to the peculiarities of the machine and standardized to read correctly by means of other more accurate and cumbersome instruments.

While a practical division of the subject has been mentioned, a more correct dividing line is made between the direct and the indirect methods of measurement or, in other words, between a measurement of the effects of the ray on the one hand and of the various factors employed in its production on the other.

Sources of Error in the Old Method.

These exist in the tube, in the character of the current actuating the tube; in neglect to measure the distance between the middle of the anticathode and the skin. As a matter of fact, the only factor which is correctly taken into account is the time of exposure.

To show the futility of this, I may say that I am able to regulate my own machine so as to produce ulcerative dermatitis with one exposure of fifteen minutes and, on the other hand, can prolong this time almost indefinitely and produce the same or less effect.

Perhaps the most serious mistake is made in the factor of tube distance. This will be appreciated when it is remembered that the effect changes with the square of the distance, and also that the true factor is the distance from the middle of the tube and not from its surface. Thus, other things being equal, the dose is more than twice as great if the distance be changed from nine to six inches between the antecathode and the skin.

The condition of the tube in relation to its hardness or resistance is most important and, while a rough estimate can be made by inspection, the true way is by the use of some form of penetrometer, such as that of Benoist's, which I now show you, and which consists of a thin central sheet of pure silver surrounded by twelve sectors of aluminum, which vary in thickness from one to twelve millimeters, respectively. (Fig. 1.)

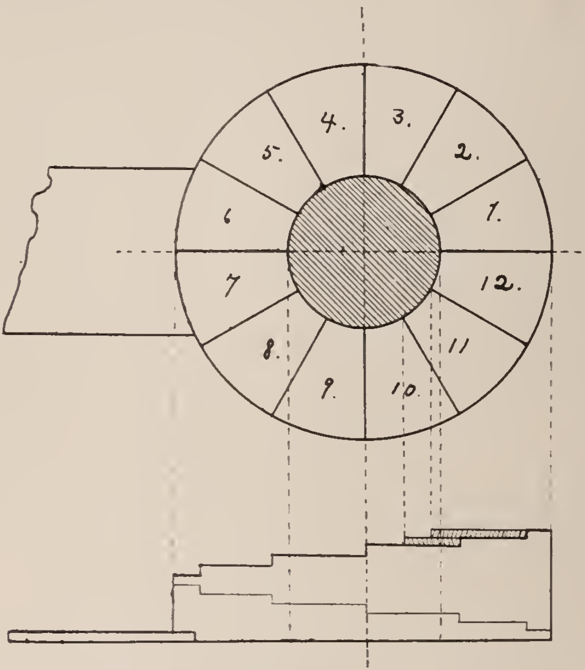

Fig. 1—The Benoist penetrometer. This is a measure of the hardness of the ray produced bythe X-ray tube. It is important to note that this is not a measure of the quantity of the ray but of its quality. The instrument consists of a disk of silver of thickness of one-tenth of a millimeter: this is surrounded by a circle of aluminum having graduated thickness of from one to twelve mm. The instrument is used in connection with the fluoroscope or the radiograph plate and gives a measure of the penetration of the ray.

Lastly, the form and amount of current passing through the tube must first be regulated by some form of valve tube in order that it be made as far as possible to run in one direction only and then should be measured by some form of milliampere meter, such as I now show. (Fig. 2.)

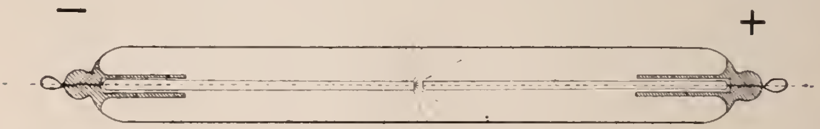

Fig. 2—Valve tube. The current is allowed to flow from the positive to the negative pole without impediment but, when it attempts to go in the reverse direction which it does during the "inverse discharge" period of the generator's cycle of activity, the flow of the ions from the coiled terminal is thrown in all directions and largely lost, since it leaves the surface of the terminal at right angles to the surface. On the other hand, the discharge in the opposite direction, plus to minus, is not so affected and is able in large part to find the pole at which it is directed. The tube has a moderate vacuum with means to reduce the same as required.

The fact that the current is running in one direction only is indicated by means of an oscilloscope, which I now show, and which has the property of showing a blue light at one or other of its poles, according to the direction of the current, and at both poles if the current be alternating. (Fig. 3.)

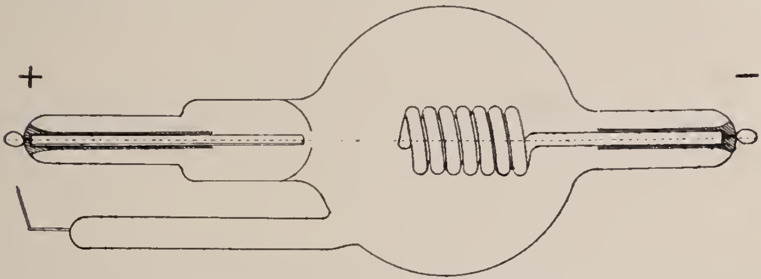

Fig. 3—The oscilloscope. This is a tube of lead glass of low vacuum, having two terminals very near to each other. As is indicated in the diagram, the negative pole emits a small amount of blue light and if there be inverse current the other pole also gives out the same light in quantities proportional to the amount of inverse discharge. The fact that it is also to some extent a negative pole accounts for this. The instrument thus becomes an indicator of the amount of inverse discharge and the valve tube is regulated and assisted if need be with a spark gap until this is made to vanish.

These three instruments used in connection with the milliamperemeter give a measure of the quantity and quality of the ray and, taken in connection with the time of exposure and the distance of the anticathode from the part exposed, give a correct indication of the amount of effect which is being produced upon the part exposed.

These four factors taken together are the basis for a very practical and by no means difficult method of knowing the amount of exposure.

Holzknecht's method, by the exposure of impure potassium sulphate in a container of copal varnish, is an example of the method of measuring the effect of the rays. The chemical changes color under the action of the rays.

Kienbock uses a special photographic paper, which must be developed before it is examined, but which then serves as a record of the amount of exposure. As a result of this method, he makes the positive statement that the so-called "individual susceptibility" factor does not exist and that the same dose will produce practically the same effect. He bases this upon the result of exposures upon 1,300 persons in the Vienna Polyklinik, during 1906. The doses in these cases were measured by both his own method and by that of Sabourd and Noire.

Bordier's Method.—If one is interested in the therapeutic side only of X-ray work, the method of Sabourd and Noire, as modified by Bordier, has many advantages of convenience. These observers noticed that the screen of the ordinary fluoroscope changed color with use and proved that the action of the X-ray was responsible.

They make use of small squares of cardboard, covered with platinum barium cyanide, which are conveniently attached to the skin of the patient under treatment and are subjected to the same radiation as the skin of the affected part. They provide a scale of colors running from a light apple green to a brown yellow and with numbers corresponding to each shade. The scale is similar to that used in the estimation of hemaglobin.

All that is necessary is to attach the test board to the skin as near the part to be treated as possible, make an exposure and from time to time, and examine the test piece in comparison with the scale of colors until the required shade appears.

In this method it is not necessary to take note of any of the factors previously mentioned since the time, distance, quality and quantity are the same for the test and for the skin treated.

It is, however, not so satisfactory for diagnostic work and has the drawback before mentioned that the color of the test board is not permanent. Also the comparison must be made in daylight and this light shortly changes the color of the test board to its original shade.

Other Methods.—For those who desire to look more carefully into this matter it is well to mention other less common methods of measurement and devote a few words to each.

Several observers make use of a small double fluoroscope, one side of which is provided with a small amount of radium of standard activity, which serves to illuminate it. The other side receives its light from the X-ray and a comparison is thus possible.

Valuable information may also be obtained as to the character of the X-light from measurement of the spark gap, which is adjusted by trial to equal the tube in electric resistance, a special form of sparking terminal being required.

This can be done with even more accuracy by means of the new electrostatic voltmeter, and a very interesting method is also carried out by means of an electroscope of known capacity which is discharged when placed in the path of the ray.

A solution of iodoform in chloroform is changed in color when exposed to light, free iodine being liberated, an interesting point from a therapeutic point of view.

In fact, this subject has reached such a stage of development that at, a recent meeting of the Roentgen Society, in London, the chairman delivered himself of the following epigram: "It is only the criminal who burns his patient, and only the fool who burns himself."

"TOO DAMNED GOOD."*

By W. W. Potter, M. D.

Spokane, Wash.

As we approach the alleged "chloroforming period" in life, when we begin to realize that our days of greatest activity are nearing their close, 'tis then we are apt to fall into the reminiscent mood; and when such a man is asked to give an address it is very likely to be more or less retrospective. He feels that he soon may be considered by his confreres as a "has been." He also feels that his experiences may be of valuable assistance to those who are filling the ranks behind him, and crowding him to the shelf. He knows that new men and new methods are sure to come, yet he believes that something of value may be gleaned from the old. I am in the reminiscent mood tonight, and shall present some heretofore unwritten, and in the main forgotten, medical facts and figures, which I trust may be of benefit to our society. In casting about for a heading for my theme, I have chosen a very peculiar one, viz., "Too Damned Good." Seemingly there is nothing medical about this, and it may sound very irreverent, but it is not my own language, it is a quotation.

Not long ago, at a State Medical Association meeting, the president of the society gave a lawn fete at his beautiful home. Among other things provided for his guests were intoxicating beverages. The president himself acted as waiter on this occasion, urging all to partake. One of his guests(whose history of thraldom to, and escape from narcotics was well known to the president) politely declined, only to be met with the surprising retort, "don't be too damned good." The following evening the local medical association gave a "smoker" to the members of the state association, members only being invited. Here, too, intoxicating drinks were furnished in abundance, and the evident intention of the committee of entertainment was to get everyone drunk, and as speedily as possible. I regret to say that the committee succeeded admirably in the main.

This incident raises in my mind the question, what is the duty of this and other medical societies as to furnishing intoxicants at their banquets? There are many reasons why medical societies should not do this. I will mention only a few.

First, we are a body of medical men, looked up to by the laity, and expected to take the lead in all things pertaining to health. Our precepts go for naught, if our practice does not coincide. Medical authorities are changing their views of alcohol, and plenty of proof can be cited to show that it is purely a narcotic; that it is a depressant and not a stimulant, though seemingly so, and long classed as such; that its food value is practically nil; that it generally retards and rarely aids digestion. Many other former notions concerning it have been proven to be false. In other words, it is a "mocker" still, just as we were told it was three thousand years ago. This remedy should be kept in its proper class among the other narcotics, and used as such only medically. It surely has no place at the festive board of medical men and, if we would constitute ourselves into a "representative body of the medical profession," in accordance with Art. 11, of our constitution, we should "represent" only the higher things in medical life and ignore the lower.

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*Read before the Spokane County Medical Society, Spokane, Wash. Dec. 10, 1908.

Again, we do not know the frailties of our members, much less those of members of other societies who may be our guests. Is it anything less than criminal to urge one to partake with us as a beverage of that thing which we would deny to him as a medicine? Or shall we be under any less indictment if our social custom is the primal cause of someone stumbling into the habit of inebrity, which habit he soon finds is beyond his control, a habit which not only unfits him for further usefulness in life, but renders that life a burden to himself and the community?

This point, *our societies' responsibility to our fellows,* is the very one that is usually least considered by our committees of entertainment, if considered at all. But to my mind, it is the most important of all, and the one that should deter us from knowingly putting a stumbling block in the path of anyone.

I am thinking especially of our young men, so splendidly equipped with their modern, up-to-date methods to do excellent work. I think, too, of the many wrecks, once these same kind of men, whom it has been my fortune to meet. This social custom has been the prime cause of the downfall of many victims. I claim to speak upon this subject with personal knowledge, for I have been brought into close contact with it for the past thirty years.

Twenty-one years ago this society was organized with a membership of about a dozen. Today it numbers one hundred and twenty-five upon its roll. During the last twenty years I have known sixteen physicians who, with one exception, practised their profession in Spokane, all of whom were confirmed inebriates. Six of them, 37.5 per cent., used alcohol alone, while 62.5 per cent. combined also morphin, chloral, cocain and other strong narcotics. Nine of the sixteen were members of this society. Seven of this total number died of inebriety. Only one of the sixteen has escaped from his bondage. Only one of the nine remains a member here. And he represents a very small class, for only about 5 per cent. of confirmed drug habitues are permanently cured, the vast majority relapsing into their old ways within a year.

I know the personal history of twelve of these men, and they all attribute their downfall primarily to the social glass. That one, who ran amuck in this building on cocain, was first led into that condition by the social glass. The one who fell in drunken condition and fractured his skull, from which injury he died, started his downward course with the social glass. The same is true of that one who was aided financially by members of this society, when all was lost to him through drink, and he desired to try a new field. And so I might specifically mention the whole twelve, but the trouble began with them all by indulging in the social glass. Surely someone had been "too damned good" to these men. Rather a bad record for Spokane, do you say? I agree with you, but I am persuaded from evidence, that other localities and other societies will present the same, or even worse figures. And my only excuse for bringing forward the above facts is that it seems necessary, at times, to write the "faults of our brothers" elsewhere than "upon the sands," in order that those who are following after may profit from those who have gone before.

But the thing I would have you clearly see, and fully understand is that the mistake of these individuals was not entirely their own fault. Those responsible for the continuance of the custom are principally to blame. "Ce n'est que le premier pas qui coute." 'Tis only the first step that costs. How shall we prevent this first step? It is easy. Renew a very old and forgotten prescription. It was written for the one that "giveth his neighbor drink, that putteth thy bottle to him, and maketh him drunken also." It is *"thy bottle"* that I am emphasizing, for *"thy bottle"* is usually the first step.

Do I hear someone say that this is not a medical topic? Is not inebriety recognized as a diseased condition? Is there anyone here who has not been consulted professionally in such cases, and am I not urging the best methods of all—preventive medicine?

Once more I urge my point for the reason that other medical societies have already adopted this course. Statistics on this point are difficult to obtain. Only through those frequently visiting medical societies can we gather reliable information. Dr. T. D. Crothers, of Hartford, Conn., writing to me under date of June 29, 1908, says: "I visit a great many societies in the east and it is noticeable that wine has disappeared as part of the menu at nearly all the banquets, paid for individually, at alumni meetings." . . .

"You can say with great certainty that from Maine to California, the use of wine in medical gatherings is disappearing rapidly." . . . "A leading New York society, at is annual gathering, was given a variety of wines by a wine merchant. The occasion was marked by so much disorder that it was resolved not to have wine again at any future occasion; and that is about the sentiment everywhere." . . . "I note with pleasure, the disappearance of wine at medical banquets, and the substitute of apollinaris, or other waters in its place."

Perhaps no physician in this country visits as many medical societies as does Dr. J. N. McCormack, of Kentucky, the well-known lecturer employed by the A. M. A. Writing me upon this point, under date of October 7, 1908, he says: "The feeling is spreading rapidly all over the country to cut out alcoholic beverages from medical banquets and, while not an extremist or total abstainer, I heartily favor it for so many reasons that I will not try to enumerate them. My ideals for our profession are so high that I advocate putting ourselves upon the highest plane in everything, quietly and without ostentation, trying to make each doctor and each collection of them, models of their kind for the people."

I believe it is unnecessary to add anything further along this line. You are well aware, however, that many secret organizations and others composed of business men, long ago recognized the evil results following this custom, took the initiative, properly ours, into their own hands and cut this thing out. And I am informed that there is in one county medical society in this state, that of Whitman County, which has an article in its by-laws, prohibiting the use of intoxicants at society banquets.

One of my first acts as your president was to sign a voucher in payment of a society liquor bill, contracted preceding my incumbency. Older members can well understand my feelings on that occasion, knowing as they do, what has been and what still is, my sentiment on this liquor question. And now my last act is to protest as vigorously as possible, for the above and many other reasons, against any future use of intoxicants at our banquets. In other words, let us quit being "too damned good" to our fellows.

NORTHWEST MEDICINE
THE JOURNAL
of the
WASHINGTON STATE MEDICAL ASSOCIATION.
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Published Monthly by the Washington Medical Library Association.

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Editorial and Business Office - Marion Building, Seattle, Wash.

Subscription Price, $2.50 per annum in advance. Single Copies, 25 Cents.
Foreign Countries, $3.00 per annum.

Entered March 14, 1903, at Seattle, Wash., as Second Class Matter, under
Act of Congress of March 3, 1879.

VOL. VII. FEBRUARY, 1909. NO. 2

THE FIRST MEETING OF THE MEDICAL ASSOCIATIONS OF THE PACIFIC NORTHWEST, COMPRISING OREGON, WASHINGTON, IDAHO AND BRITISH COLUMBIA, TO BE HELD AT SEATTLE, JULY 20, 21, 22 AND 23.

On the 29th of last month a meeting was held at Portland of the officers of the four associations of the Northwest, at which the above date was chosen for the meeting at Seattle next July. On the first day a general session will be held in the morning for the usual events attending the opening of such an assembly. In the afternoon will be the only second daily session of the meeting, at which the special feature will be addresses on medicine and surgery by guests from the East. Thereafter but one session will be held daily, from 9:30 to 1:30, the aim being thereby to maintain an interest in all sessions without tiring the members by a multiplicity of medical gatherings. These morning sessions will be divided into three sections, those on medicine and surgery continuing through three days, while opthalmology will have sections on the second and third days, genito-urinary replacing this on the fourth. The program of each section meeting will consist of five papers, the readers being assigned to each association in proportion to the relative membership of each. By this plan it is aimed to avoid crowded programs, to have sufficient time for adequate discussions and to select papers that will be of the greatest interest. Provision will be made for simultaneous meetings of all the Houses of Delegates, so that their sessions will not conflict with the scientific work. By leaving the afternoons free from medical demands, visitors will have abundant time to visit the exposition and enjoy the entertainments that will be provided. It is planned to have a public meeting on tuberculosis during one evening. The meeting will be held at the Broadway High School, where sufficient meeting places can be had for all demands and where it is expected to have also an interesting and profitable commercial exhibit. More details will be given in our subsequent issues.

THE NEW ASSOCIATION JOURNAL.

At the Portland meeting last month the journal committees from the three state associations perfected the plans for a common journal which will be presened for ratification at the July meeting. This committee will incorporate as a journal association which will lease for a nominal sum *Northwest Medicine,* taking its subscription list, advertising contracts and good will. It will be enlarged and improved to meet the requirements of such a publication and from present expectations, will compare favorably with other association journals. It will be published in Seattle, where the editor-in-chief and managing editor will reside. Assistant editors will be appointed, two each from Oregon and Idaho and one from Washington. The secretaries of the three associations will be ex-officio associate editors. If the plan is approved by the three associations, it is expected to issue the first number in August. At the same time it was proposed that the British Columbia Association should join in this enterprise, and it is hoped that it may conclude so to do. The members of all the committees were agreed that this publication should accomplish an important mission in uniting and consolidating the medical interests and friendships among the physicians of the Northwest.

A NEW MEDICAL ACT.

The most important measure to the medical profession now before the legislature is the proposed new medical act. The reason for its consideration is the introduction of a bill to create an independent osteopathic examining board. It has been decided by the common experience of other states that the interests of the public, physicians and osteopaths are best conserved by a plan that requires all who treat the sick to obtain licenses for this purpose on like conditions. Therefore, the new bill is modeled on that of California which has been in operation for two years and has proven satisfactory. It provides for an examining board of five regulars, one homeopath, one eclectic and two osteopaths. No examination is held in surgery or practice, but all applicants are to be examined in the fundamental branches which all schools of medical teaching claim are taught in their institutions. Each applicant must possess a diploma from a recognized school of his own class and, on passing the board, will receive a license to practise medicine or other special form of treatment he may desire to follow. After passage of this act the absence of a license will be conclusive evidence of illegal practice. The osteopaths, like other practitioners, assert that their desire for an examining board is to exclude deficient and quack osteopaths. This is the common ground on which all can meet who desire restrictions on medical practitioners and, therefore, it seems as if all might unite on this comprehensive act. At the present session of the Oregon legislature a similar act has been presented containing substantially the same provisions as that of Washington. If these are adopted, there will result a nearer approach to uniformity of medical laws on the Pacific Coast than has hitherto existed.

A STATE TUBERCULOSIS SANATORIUM.

Much has been said in the daily press of Dr. Ghent's bill before the House, carrying an appropriation of $150,000 for a state sanatorium, and many inquiries have been received concerning it from many sources. While we hope in due time that such an institution may be established, the bill in question is so hastily conceived and its premises so scantily considered that it cannot demand the support of its thinking readers. What would be thought of a man who should decide to invest that sum of money in a business enterprise, of which he had made no investigation, whose location he had not considered, whose cost of maintaining had not been studied, and of which he knew practically nothing? That is, in fact, the position of the legislature with reference to this question at the present time.

The bill provides a certain sum for a site, an administration building for 250 patients but a limited number of beds, and support for two years. But these estimates are all guess work, supported by no facts. It is stated receipts from patients will be an important item. Yet, the purpose of such a state institution is primarily to care for poor tuberculous patients and little income from this source could be expected unless results were developed that might attract the well-to-do. It should be kept in mind that such an institution will probably demand a sum for annual maintenance equal to that mentioned in the bill.

The only sensible action that can be taken at this session is the passage of a measure, with a moderate appropriation, calling for a committee to investigate the whole tuberculosis problem in this state, to determine the amount and distribution of the disease, the best location for a sanatorium, the comparative merits of different forms of structure, the probable cost per patient and all other pertinent questions. With these data at hand, the legislature two years hence can consider the subject intelligently and be prepared to expend the public funds economically and effectively, as is not possible in the existing absence of necessary information.

We have no personal interest for or against this measure and no ax to grind but, like all citizens interested in the warfare against tuberculosis, we desire to behold the public funds expended in a manner to get the best results, with the least waste and in a manner that will reflect credit upon our state. This cannot be accomplished by the passage of a haphazard bill, displaying a minimum of investigation and slight familiarity with the subject. Though it may be considered desirable to secure such public institution at an early date, it will surely be preferable to delay its consummation till a time when something satisfactory and durable may be secured.

THE SPOKANE SOCIETY VERSUS ALCOHOL.

The action of the Spokane County Society relative to the use of liquors at its social functions, as stated in the report of its meetings on another page, is so radical as to call for more than a passing reference. When the second largest medical society in the state passes a unanimous vote at its annual banquet that hereafter no liquors shall be served at such affairs, and proposes to incorporate a clause to that effect in its By-Laws, it is a call to the profession of this state to seriously consider its relation to the drink problem. Although a generation ago doctors were supposed as a class to be liberal consumers of alcoholics, the day has passed when they can appear in public in any degree of intoxication and be considered as respectable members of society. The agitation today against the use of alcohol as a beverage is so widespread that every man must entertain positive views for or against it and there is no class of citizens in any community whose attitude, expressed as a body, will carry so much weight in this matter as ours. The example set by such a large body of physicians as that of Spokane cannot but have a marked influence on the drink habits of other bodies of men, especially of the younger generation. It is worth the while of other medical societies of this state to consider whether this precedent is not one of sufficient value to call for its imitation. This is not intended as a temperance sermon; it is merely to bring before the physicians of the state a worthy opportunity for them to stand as a class for a high plane of good morals and the best citizenship.

REPORTS OF SOCIETY MEETINGS.

KING COUNTY MEDICAL SOCIETY.

President, J. B. Booth, M. D.; Secretary, G. N. McLoughlin, M. D.

The regular semi-monthly meeting of the King County Medical Society was held at the Medical Library, Jan. 4, with President Booth in the chair. John Hunt acted as secretary in absence of Secretary McLoughlin. About 100 members and visitors were present.

Election of Officers. The annual election resulted in the following being chosen as officers for the ensuing year: President, Grant Calhoun; Vice-President, R. M. Stith; Secretary, L. H. Redon; Treasurer, H. C. Ostrom.

A. W. Hawley, chairman of banquet committee, reported the banquet would be held at Hotel Perry, Jan. 18.

President-elect Calhoun took the chair for the remainder of the meeting.

CLINICAL CASE

Acquired Icthyosis. Arthur Lensman presented a boy of 19, of stunted growth, childish voice and other marks of immaturity. After an attack of scarlatina, at 12 years of age, followed marked dryness and desquamation of the epidermis which persists, more marked on extensor surfaces. There is non-development of testes, and childish sexual organs.

The doctor gave an interesting historical sketch of this condition, describing the intimate relationship between the thyroid, testes and skin, stating this icthyosis was probably due to deficient development of the thyroid. Treatment will be thyroid extract and cod liver oil, with salt baths and tar ointment.

PATHOLOGIC SPECIMEN.

Duodenal Ulcer. C. A. Smith presented specimens from a woman of 50 who had for years complained of indigestion. Most marked symptom was pain, centered in region of gallbladder. Diagnosis had rested between ulcer of pylorus or duodenum or gallstones. During the year of the doctor's treatment operation was not possible on account of the tumultuous heart action. She had presented jaundice and ascites, but no anemia. The doctor exhibited the heart showing mitral stenosis, the liver with chronic interstitial hepatitis, to which was attached a section of the pylorus and duodenum, the latter presenting an ulcer at point of entrance of the common duct. The case was discussed by Drs. Heavenrich, Jones and Paschall.

PAPERS.

Twentieth Century Medical Psychology. W. T. Williamson, of Portland, addressed the society on this subject, calling attention to the modern study of psychology by the progressive physician. The multiplication of different mental cults is due to our ignoring this subject. We have always recognized numerous functional diseases. It is a question whether all of those may not later be traced to organic lesions. He paid his respects to Christian Science and Emmanuel movement, the latter of which he fears may do harm by being taken up by unscrupulous enthusiasts. The subject was discussed by E. C. Bowes, J. B. Loughary, B. Hahn, H. G. Davidson, J. C. Sundberg and J. W. Thomas.

Applications for membership were received from E. B. Burwell and S. E. Griggs. J. M. Brown was elected to membership.

The annual smoker of the society was held at the Hotel Perry, Jan. 18, attended by about 125, including ten lady physicians.

The guests of the evening were Drs. J. R. Yocom and R. A. Gove, of Tacoma; Wilson Johnston and E. L. Kimball, of Spokane; W. C. Cox, of Everett, and Mr. Frederick Bausman, of Seattle.

After refreshments the retiring president, J. R. Booth, acted as toastmaster, when responses were given to the following toasts: "Our younger members," C. A. Smith; "The doctor's idle hour," Mr. Frederick Bausman; "Our older members," H. Eugene Allen; "The relation of the health department to the physicians," F. S. Bourns; "The King County Medical Society," Grant Calhoun; "The ladies," J. C. Sundberg; "The future of our profession," E. C. Bowes.

SPOKANE COUNTY MEDICAL SOCIETY.

President, W. W. Potter, M. D.; Secretary, Carroll Smith, M. D.

The annual meeting of the Spokane Medical Society was held Thursday, Jan. 7, in the offices of Drs. Baker, Catterson & Kalb, President Potter presiding. About sixty members were present.

The annual election of officers was held and resulted as follows: H. H. McCarthy, President; A. R. Cunningham, First Vice-President; P. D. McCornack, Second Vice-President; Carroll Smith, Secretary; Charles Doland, Treasurer; S. E. Lambert, Corresponding Secretary; D. W. Potter, Wilson Johnston, G. K. McDowell, Board of Censors. W. S. Frons was elected to membership and the following applications for membership and were referred to the Board of Censors: John R. Sinks, A. W. Anderson, Mary McMillan, L. R. Quilliam. The auditing committee, Wilson Johnston and Charles Doland, reported the books of the Treasurer and Secretary to be correct. There was $534.82 in the treasury.

The Secretary reported a membership of 126 for 1908, 23 of whom were new members. E. S. Hutchins died during the year; five moved to other counties, one left the state.

This was the twenty-first annual meeting of the society, it having been organized in 1888. Eight of the charter members are still in the society and were placed on the honorary roll, as follows: G. S. Allison, C. G. Brown, T. L. Catterson, N. Fred Essig, G. W. Libby, D. Mason, C. K. Merriam, J. M. Powell.

This year W. W. Potter and D. G. Russell are to be added to the list.

A list of twenty-eight members was read who had contributed ten dollars each to the legislative fund to be used for the prosecution of illegal practitioners.

The banquet committee presented a report.

The annual banquet was held at Davenport's, the evening of Dec. 10. The guests of honor were the members of the state senate and legislature from this district, Lieut. Gov. M. H. Hay, Senator Paulhamus of Pierce County, Hon. J. J. Browne and Congressman Poindexter. N. Fred Essig was toastmaster. Good fellowship predominated and a general good time resulted and the census of opinion was that more social functions should be indulged in by the society.

The feature of the evening was the annual address of the retiring president. Dr. Potter's subject was "Too Damned Good," and dealt with the drinking habit. It was a masterful address, the purpose of which was to do away with the use of alcohol at all social functions of the society.

C. S. Kalb moved that at all future social functions of the Spokane County Medical Society all forms of alcoholic beverages should be absolutely dispensed with. The motion carried unanimously.

G. W. Libby and Wilson Johnston proposed the following amendment to the By-Laws to be voted on at the March meeting: "This society disapproves of the use of alcoholic beverages at its banquets and prohibits the use of the same at any and all of it social meetings."

D. E. Olmsted read the circular letter from the State Board of Medical Examiners regarding the prosecution of illegal practitioners but owing to the lateness of the hour no action was taken on it.

WHATCOM COUNTY MEDICAL SOCIETY.

President, S. H. Johnson, M. D.; Secretary, J. R. Morrison, M. D.

The Whatcom County Medical Society held its regular monthly meeting in the Baker Hotel, at Bellingham, on Jan. 11.

Dr. F. J. Van Kirk read a very interesting and instructive paper on Lymphoid Tissue. This was discussed by the members present and many interesting thoughts brought forward.

Dr. W. N. Hunt gave the annual address of the retiring president, in which he emphasized the objects of the society and urged that the membership be increased as much as possible, stating that every eligible and reputable physician should be repeatedly urged to associate himself with the society. He also referred to ethics of practice as being in many instances where practitioners are apt to err. He discussed fees of the physicians, especially the minimum charges and criticized very strongly contract practice. Reference was made to the plan adopted by King County Society, commending it very highly. He mentioned sanitation and hygiene, making a plea for every physician to use all the influence in his power in educating the people as much as possible along those lines.

Dr. A. Macrae Smith reported Dr. Hood's condition, who has myositis of deltoid, trapezius and pectoral muscles. The secretary was instructed to write the doctor expressing the wish of the society for a speedy recovery.

BOOK REVIEWS.

Edited by
KENELM WINSLOW, M. D.

Suggestive Therapeutics, Applied Hypnotism, Psychic Science. By Henry S. Munro, M. D. C. V. Mosby Medical Book Publishing Co., St. Louis, 1908. Second edition; cloth; 360 pp.

This is a well-meant but pernicious book, aside from its healthful, benevolent philosophy. The author is a conscientious man, eager to do good but ignorant of the ultimate, irreparable evils of hypnotism. He suggests hypnotism "to make new impressions upon cerebral cells and substitute wholesome mental states" in preventing insanity, unmindful of the fact that very much insanity is due to hypnotism. "Many people are incapable of thinking for themselves," and a self-elected hypnotist "gets control of his patient and puts him in control of himself." Intellectual vanity is characteristic of all hypnotists. It is manifest here.

The will is the regnant power of the soul. To dethrone by submitting it to another intelligence than the owner's, no matter how laudable the purposed "suggestion" left by the usurper, gives no assurance of any but temporary good, and with later disastrous effects upon the subjective individuality.

Prithee, who is the better thinker,—the lop-sided genius, or the sodden, plodding, ordinary citizen? Greatest thinkers dwell in the clouds; are esteemed "queer," ill-balanced, by the general stratum of society. Shall some misguided zealot—superficial hypnotist—impertinently dethrone the will of the genius, and "suggest" a different bias, or "suggest" him to come down to earth, sanity, and commonplace, as reckoned by said regulator of mental states and conditions? What meddling marplots and hinderers hypnotists might become. The hypnotist might "suggest" to some giant intellect one trend of thought; you or I another; the owner might prefer to soar into realms of intellect not comprehendable to any of us; but, forsooth, the aforesaid genius must only think and feel as ordinary mortals, or find his own personality superseded by one of our guardian selves. Grant the subject is ill, or does not think as the average, by what divine right does any one dare set aside the prerogative will of that man, and presume to "think for him." Suggestions to the "wakeful consciousness" is not in question. If opening the door of another's soul would admit only the operator, and the intruder always animated by exalted unselfish motives, there might be palliation. An awful responsibility, even then. The remoter effects of such presumption is not reckonable. It is precisely such impertinence among ecclesiastics that provoked those theological abuses the author justly scores.

Will is not a faculty of the soul; it is the potential element. Desire and fear are not powers, but faculties. Desire does not direct will; will directs desire, and controls choice. A hypnotized (subjective) mind cannot make rational selective choice. Hypnotism finds some temporary uses, but its ultimate is divers insanity, obsession, sin, hallucinations, death. Hypnotism and mediumship are identical in process, and the results of both direful. CRUTCHER.

Gynecology and Abdominal Surgery. In two large octavos. Edited by Howard A. Kelly, M. D., Professor of Gynecologic Surgery at Johns Hopkins University; and Charles P. Noble, M. D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. Large octavo volume of 862 pages, with 475 original illustrations by Mr. Hermann Becker and Mr. Max Brodel. Philadelphia and London: W. B. Saunders Company, 1908. Per volume: Cloth, $8.00 net; Half Morocco, $9.50 net.

The book opens with a very complete chapter on the after care of laparotomy cases and post-operative complications. In the chapter on extrauterine pregnancy Williams still advises immediate operation in every case of acute hemorrhage from a ruptured tubal gestation sac. Though hardly coming under the scope of abdominal surgery a chapter is devoted to the diseases of the female breast. This chapter, written by Bloodgood, is one of the best in the volume. The whole subject is presented in the author's remarkably lucid and comprehensive style. The physical characteristics of clinically malignant tumors and the gross appearance of the cut surface of benign tumors and early carcinomata are described with such clearness and comprehensiveness of detail that one cannot but wish that every practitioner in the country might read this chapter. Murphy discusses fully the surgery of the intestinal tract, the author's method of proctoclysis being described in detail. Opie contributes a good chapter on the pathology and diagnosis of surgical diseases of the pancreas. No mention, however, is made of the Cammidge pancreatic reaction in the urine. A useful chapter is the one devoted to the general subject of drainage in abdominal and pelvic surgery, written by Anspach. A clear line of distinction is drawn between the drain per se and the gauze pack for excluding infected areas from the general peritoneal cavity. The indications for and against the use of drainage are in the main those followed by most operators. Kelly's chapter on the surgery of the ureters, while short, is full of good things, particularly the numerous points given for the tretament of those accidental injuries to the ureters occurring in the course of operations in the female pelvis. The volume closes with a chapter on the surgery of the kidney, by Noble and Anspach. In the diagnosis of renal and ureteral calculi the use of both the X-ray and ureteral catheterization is insisted upon, and the weak points in both methods are impartially pointed out.. The book is well gotten up and some of the illustrations are especially fine. The work will be a valuable addition to the library of every surgeon. Jones.

Nervous and Mental Diseases. By Archibald Church, M. D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M. D., Professor of Psychiatry, Columbia University. Sixth edition, revised and enlarged. Octavo volume of 944 pages, with 341 illustrations. Philadelphia and London. W. B. Saunders Company, 1908. Cloth, $5.00 net; Half Morocco, $6.50 net.

This work has become so well known that it is not necessary to speak of the high place it holds among books on nervous and mental diseases. By the sixth edition we see that the authors are not willing to rest on the reputation the book has gained, but have added considerable new material. Dr. Church has added a chapter on psychasthenia, which deals with fixed ideas, obsessions, imperative conceptions, impulses, phobias, doubts, agitations, feelings of changed personality and similar conditions, which, until recently have been considered as evidence of hysteria, neurasthenia or of insanity, but and now given a place midway between the neuroses and psychoses and is quite well defined. The review of recent problems of psychiatry, by Dr. Adolf Meyer, is very interesting and instructive. The chapter on dementia praecox is clear, and the article on hypnotism and suggestion is an addition to the book. The numerous illustrations and the general arrangement of the subjects make the book very interesting to the general practitioner who so often complains of the average book dealing with nervous disorders, as being dry and uninteresting. Nicholson.

Essentials of Medicine. A Text-Book of Medicine. For students beginning a Medical Course, for nurses, and for all others interested in the case of the sick. By Charles Phillips Emerson, M. D., Late Resident Physician, the Johns Hopkins Hospital; and associate in medicine, the Johns Hopkins University. Illustrated by the Author. Cloth, 383 pp. Philadelphia and London. J. B. Lippincott Company, 1908.

Dr. Emerson's excellent book is entitled to nothing but praise. It is clear, concise, simple and logical, and presents the essential points and principles of medicine in an easily understandable and readily retainable form. The arrangement is splendid. It begins with the cell and throughout the volume the importance of the cell and its vital processes in their relation to the human economy are constantly impressed upon the reader. Each topic has been carefully and thoroughly presented as of a series of logical sequences. The causes, reasons, and effects of the various psychologic and pathologic processes taking place have been most lucidly given, and a medical tyro or nurse is thus unconsciously taught to reason from the beginning along "cause and effect" lines. The various subjects are worked out over a concealed arrangement of anatomy, physiology, pathology, symptoms, complications and sequelae, and treatment. The author's own illustrations are excellent and add much to the interest of his volume. It is to be hoped that this book will meet with the warm reception it deserves and, because of its value and merit, will find a place in the curriculum text-books of our training schools as well as in the libraries of the progressive laymen and the embryonic medical students. Heavenrich.

Diseases of the Genito-Urinary Organs and the Kidney. By Robert H. Greene, M. D., Professor of Genito-Urinary Surgery at the Fordham University, New York; and Harlow Brooks, M. D., Assistant Professor of Clinical Medicine, University and Bellevue Hospital Medical School. Octavo of 605 pages, profusely illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $5.00 net; Half Morocco, $6.50 net.

The second edition of this work appears with the text revised, and with a number of new methods and procedures which have appeared in the recent literature of the subject. It was a happy idea to have the surgical sections written by a specialist surgeon, and these essentially medical by a physician of special training and experience in genito-urinal diseases. It is a conscientious work, eminently readable, and should rank high as a hand-book with students and practitioners. The excellent drawings will be found of great service to the practitioner who is rusty in his anatomy and pathologic histology of the genito-urinary tract. Numerous illustrations of operative procedure add greatly to its value. We have no hesitation in commending this book to our readers, practitioners and students, as well as specialists. Lensman.

NORTHWEST MEDICINE

THE JOURNAL OF THE
WASHINGTON STATE MEDICAL ASSOCIATION.

March, 1909

ORIGINAL CONTRIBUTIONS

DIFFUSE SEPTIC PERITONITIS.*

By E. B. McDaniel, M. D.
BAKER CITY, ORE.

The importance of the peritoneum lies not so much in its 17.182 square inches of area, as in its great power of absorption and this is more especially marked in the diaphragmatic and omental areas. Both the lymphatics and blood vessels absorb fluids and soluble substances, while solid particles (bacteria, etc.) are absorbed almost entirely by the lymphatics.

The immediate dangers arising from peritonitis are sepsis, intestinal paresis, shock and pain, any of which may cause death. The remote dangers are many, acute and chronic; obstruction of the stomach, intestines or bile passages from adhesions, bands, twists. invaginations, etc.; long-persistent pain and discomfort, and secondary nervous and mental conditions. In general, the danger is dependent upon the virulence of the infection, the area infected, and the region infected.

In using the term virulence we must include not only the species and activity of the infecting organism, but the dose of infection, whether it be gradual or overwhelming, and the individual's power to dispose of the infecting agents; this will vary from many causes. Other things being equal, a septic peritonitis in the lower portion of the belly is less to be feared than the same in the upper portion, because of the more rapid absorption by the diaphragm and omental lymph pores. A free peritonitis spreads its infection both by the migrating lymphangitis in the subserosa, and by an extension of the exudate in the free cavity.

The toxins absorbed into the general circulation poison the vasomotor and respiratory centers, the former being attended by a diffuse engorgement of the peritoneal veins. This very hyperemia may be an important agent in resisting infection in the early stages and, according to Lenander, it may be compared to Bier's treatment by hyperemic engorgement.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

It has been demonstrated that absorptive activity has been increased in the early stages of peritonitis; it is retarded in the presence of serous or purulent exudates, when the toxins are diluted. Thrombosis and pressure upon lymph and blood capillaries also check absorption.

It has been shown also that in advanced acute peritonitis the intestinal paralysis results from toxic or bacterial poisoning of the intestinal walls, with marked changes in the ganglion cells of Auerbach's plexus. As distension increases, thrombosis and gangrene develop and the gut becomes more easily penetrable to bacteria. Thus, a continuous reinfection is produced, and the general systemic infection is increased by absorption of toxins from without the gut.

Peritonitis may be considered under three forms: chemical, mechanical and bacterial. Most without exception the source of the peritoneal infection is from without, that is, through the walls of the cavity or from some one of the intra or extra-abdominal viscera. It is a well established fact that bacteria or their products may permeate the wall of an unhealthy intestine, however slightly it may be diseased, but it has not been proven that they pass through the wall of the healthy intestine.

Inflammation of the appendix and bile passages, ulcerations and perforations of the gastro-intestinal tract, the passage of infection through the Fallopian tubes, thrombosis of any portion of the gastro-intestinal tract, secondary to mechanical obstruction, the rupture of abscesses of any of the organs in relation to the peritoneum, and wounds of the parietes or viscera are among the usual sources of peritonitis. Murphy says, "Ninety per cent. of perforative peritonitis is infected through either the appendix or the pylorus."

Broadly speaking, any lesion of an organ lying contiguous to the peritoneum may serve as a source of infection, provided, however, there be sufficient necrosis of the intervening tissues to allow the transmigration of bacteria or their products.

Although the peritoneal infection is secondary to lesions of other structures, it may become primary in importance. It is of the greatest importance to recognize the exact lesion of origin and to care for it properly or, as has been stated, "An early and definite diagnosis must be made in order to stop the source of infection, which, in a majority of cases can be done safely and easily, provided the disease is recognized before the peritonitis becomes of primary importance." In other words, the best means to combat septic peritonitis is prophylaxis or preventive surgery.

The gross appearance of the exudate is not an index to its toxic properties. The cloudy serum so frequently found throughout the peritoneal cavity, associated with a gangrenous focus, is not necessarily more than very slightly septic, while the thin acrid serum that accompanies the fulminating streptococcic peritonitis is most virulent.

The normal tendency of the peritoneal cavity to absorb its free fluids, to localize its infected exudates and, finally, to absorb its chronic adhesions, is one of the most surprising conditions the surgeon encounters. High temperature usually indicates a marked lymphatic infection, co-existing with that of the peritoneum. A temperature below normal is usually encountered in the early stages of the severest types.

The pulse, however, is the most reliable prognostic. Rarely does it fail to increase in rate and diminish in volume. A pulse rate remaining above 120 in an adult is, regardless of all other symptoms, invariably unfavorable.

Owing to the soreness of the parietal peritoneum, the rate of respiration is increased and the inspirations are very shallow; hence, from lack of oxygen, the patient soon becomes cyanotic. The face becomes pinched and drawn, the lips thin and blue; the tongue becomes dry and coated; the eyes, sunken and anxious in expression, later becoming dull. As the intra-abdominal infection increases, the extremities become cold and clammy, and the skin dusky; the urine rapidly becomes scanty, high-colored and concentrated, and it usually contains albumin and casts, as the result of toxic nephritis. The vomit, consisting at first of the contents of the stomach, soon becomes bilious and afterwards fecal in character. The mind is alert and active up to the late stages, when delirium is followed by stupor and coma.

The dorsal position, with knees flexed, is very characteristic. This position relieves the tension, not only of the anterior abdominal muscles, but of the iliopsoas.

Distension is one of the earliest signs; it results from the tendency of the intestine to remain quiet and to lessen the pain produced by active peristalsis. With the cessation of the normal downward peristalsis, and with the lessening of intestinal absorption, decomposition and fermentation rapidly appear and the coils of the intestine become locally or universally distended with gas.

In order to relieve itself, a reverse peristalsis may take place in the upper intestine, forcing the contents backward into the stomach, which responds by vomiting, and thereby rids itself of some of its contents. The relief to pressure thus afforded is slight. The bowels cannot force the gas downward along the large intestine, which is normally more sluggish than the small gut; consequently the pressure increases greatly in intensity, angulations and constrictions from adhesions form, the movements of the diaphragm are interfered with, the respirations become more superficial, and aeration of the blood is reduced. The action of the heart, being thus continually interfered with by the pressure from below, succumbs to the inevitable, and these various interferences with the vital functions result in death.

The best prognosis, one that is almost perfect, is evinced by those cases that seek surgery in the earliest hours, before absorption, before diffusion, and before any meddling by internal medication.

If we except the accidental deaths that rarely result from surgery of any part of the body, it is not to be gainsaid that, if it were possible to treat surgically every case of peritonitis within twelve hours after its onset, the mortality resulting from this disease would decrease to the small fraction of 1 per cent. In other words, skill in diagnosis, enabling us to recognize the causes and first symptoms of peritonitis, skill in operative technic, and skill in the after treatment will rob one of the dreaded diseases of the body of its horrors.

Every surgeon of experience will frankly admit that the majority of deaths result, not from the surgery itself, but from the previously misdirected treatment of the patient. Ignorance on the part of he laity, isolation and environment will always render a certain proportion of cases of peritonitis serious or hopeless. The profession, in general, by recognizing that peritonitis is, even in its incipiency, a surgical disease can do much to lower the mortality, and slowly educate the laity to this same understanding. Personally, I consider the treatment of peritonitis essentially surgical.

The Ochsner or Starvation Method of Treatment. The foundation for this method is, that the peristalsis spreads peritoneal infection. If all food and cathartics are withdrawn, and if the stomach is emptied of all its contents, peristalsis and meteorism are both reduced to a minimum. By this induced rest, the peritoneum can dispose of much infection, and an opportunity is given to localize the infecting origin; in other words, the peritoneum is splinted.

The stomach should be thoroughly washed until the organ is entirely freed of the back flow from the small intestines; rectal feeding in quantities not exceeding four ounces, and not oftener than every four hours, will furnish sufficient nourishment.

Ochsner maintains that, if this be instituted in seasonable time, the most violent and dangerous forms of peritonitis become comparatively mild and harmless. Without a doubt the general principle of this method is a decided improvement in the treatment of peritonitis, and I have witnessed some of its wonderful results at the hands of Prof. Ochsner.

Its specific application requires superior judgment. It is used to better advantage by surgeons experienced in operating, or upon cases remote from surgical assistance.

The Murphy Method of Treatment. Our experience has been almost wholly with Dr. John B. Murphy's method. Our records show thirty-two cases with two deaths. Although Dr. Murphy does not introduce any new processes, yet he combines in his technic all of the best elements and eliminates those which are harmful.

The essentials of this technic are best described under the following six heads: First, "Get in quick, get out quicker."

The cause of peritonitis, whether it be a perforation of the bowel, a gangrenous appendix, a ruptured pus tube, or whatsoever else, must be removed with the greatest possible speed and with the least handling of the peritoneal contents, or of the peritoneal surfaces. Nature has provided a protecting lymph which inhibits the absorption of toxic substances; in handling these surfaces there is danger of bruising or rubbing off the lymph and exposing new areas to absorption and infection. Therefore, Dr. Murphy believes that no attempt should be made to sponge the peritoneal surface or wipe off the lymph.

Secondly. Drainage of the lowest portion of the pelvis through a suprapubic opening or Douglas pouch, and free drainage through the operative incision. When the patient is placed in the Fowler position, the fluids of the peritoneal cavity tend to gravitate towards the pelvis; in addition, the action of the diaphragm during respiration will help to force the fluids in that direction, making the drainage in the lowest part of the pelvis very important. It must be remembered that it is not the quantity of the fluid present which is harmful, but the extent of the peritoneal surface with which it comes in contact.

Thirdly. The elimination of all time-consuming procedures at the time of the operation. It is well known that patients afflicted with diffuse septic peritonitis will endure a short operation without any great inconvenience, whereas, a prolonged operation would render their condition very serious. When all one's energy is at once directed to removing the cause of the peritonitis, and all other procedures, except drainage, are eliminated, an operation can be performed rapidly, perhaps in from six to twelve minutes. A minimum quantity of anesthetic is thus required, and the shock and vomiting after the operation are, consequently, directly decreased.

Fourthly. The semi-sitting position of the patient after the operation.

The So-Called Fowler Position. The importance of the Fowler position, pre and post-operative, is greatly underestimated. The patient should be placed in this position as soon as diagnosis is made and kept so until convalescence is well advanced.

Fifthly. The absorption of large quantities of water through the rectum, which reverses the current in the lymphatics of the peritoneum, making the surface of that membrane a secreting instead of an absorbing agent and markedly increasing the secretion of urine.

Dr. Murphy's method of introducing large quantities of water into the rectum is as follows: He inserts a nozzle having three or four openings, into the anus to which is attached a rubber tube leading to the vessel or bag. This is filled with water and elevated but a few inches above the plane of the rectum, the idea being that the water shall just trickle into the rectum no faster than absorption takes place.

Thus, from a pint to a quart of normal salt solution should be allowed to enter in an hour, the process being a continuous one and the flow so regulated, that no accumulation of water takes place in the bowel. In other words, an attempt is made to inject the water as fast as it is absorbed. The value of the several openings in the nozzle lies in the fact that if flatus should accumulate in the rectum it will be discharged through one of the tubes, while the others continue to carry the water into the rectum.

When it becomes necessary to discontinue the flow of water, the tubes are disconnected from the nozzle, the latter remaining in the anus, thereby avoiding irritation by the constant removal and insertion of the nozzle, and at the same time facilitating the passage of the flatus. By this method large quantities of water will be absorbed within the first few hours after the operation.

This absorption produces two excellent results. In the first place, it reverses the current of lymph in the peritoneal lymphatics. Thus, instead of absorption taking place from the peritoneal surfaces, the peritoneum is bathed with the fluid which is freely discharged from the mouths of the lymphatics. The posture combines with the action of the diaphragm to force this fluid constantly downward to the pelvis; thus, the fluid carries with it in its descent the infectious matter from the peritoneum and escapes from the pelvis through the drainage. Secondly, the free absorption of the fluid from the rectum stimulates the heart and the kidneys, and at the same time the septic material which has gained entrance into the circulation is discharged through these channels. After the ordinary abdominal section in non-septic cases, the average amount of urine secreted in the first twenty-four hours is about sixteen ounces, and in the presence of sepsis it is apt to be much less.

Lastly, the prevention of the peristaltic movement of the intestines, withholding all food and liquids by mouth, and perhaps by the administration of opium. This last precaution, by checking peristalsis, is very effectual in preventing the dissemination of the septic matter.

The absorption of large quantities of fluid by the rectum is quite sufficient to sustain the patient for forty-eight hours or more but, if his condition is so precarious that food seems a necessity, small quantities may be injected into the rectum with the water.

It is particularly noticeable that none of these essentials of treatment are new; we have, each of us, used one or more of them at different times and on different patients. While doing so, we may not, however, always have made a judicious choice and, perhaps, we may have taken steps that were altogether unnecessary and injurious to the best interests of our patients.

INJURIES TO THE EYE AND ADNEXA.*

By H. V. Würdemann, M. D.

SEATTLE, WASH.

(*Concluded.*)

Methods of Examination.

A careful history should be obtained, giving the date and hour of the accident, the character of the work and surroundings, the instrument, object or foreign body causing the lesion, and in special cases the names of the witnesses to the accident; the character of attempts to remove the foreign body and whether or not the case has been attended by a physician are facts that should be elicited. Remember that while the interests of the patient are of prime importance, yet we should be guarded in our prognosis, as it depends very largely upon the existence of previous injuries and the character of the first dressing. We should never give an opinion reflecting upon the first consultant or as to the liability of the employer, for these are facts that the lawyers may be allowed to fight about and the courts to decide. The less we have to do with the legalized parasites who are in the habit of soliciting personal damage suits, the better it is for the physician and we should not furnish information in advance, upon which a personal damage or malpractice suit might be based.

Owing to the transparency and translucency of the ocular structures a number of special methods of examination are of help of which *general inspection by direct and reflected light* should first be used.

Many small and otherwise almost unseeable abrasions of the corneal epithelium, wounds and small foreign bodies in the cornea may be brought into view by the staining of the tissues by a 2 per cent. fluorescin and 2 per cent. bicarbonate soda solution. This analine dye will not stain the intact corneal epithelium, but readily passes into the subjacent parenchyma and abraded epithelial cells, forming a bright green background, upon which foreign bodies are readily perceived. Magnification of the eye by a lens, preferably by the Berger binocular loupe, is of great value.

Focal illumination in the dark room is ordinarily carried out by focusing the light upon the eye by a large loupe. The use of the diaphanoscope for this purpose gives, however, a much better illumination, as the light is confined to a narrow beam. My transilluminator is the size of an ordinary fountain pen and is as readily handled. (Fig. 6.)

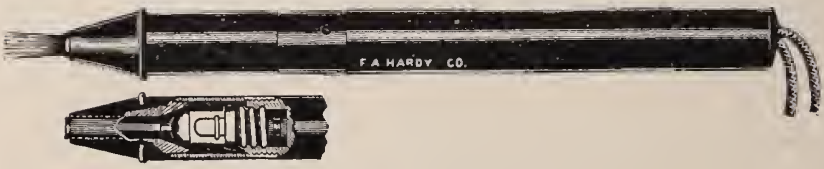

Fig. 6—Author's Transilluminator.

The ophthalmoscope should first be used at a distance of a couple of feet from the eyes and magnification obtained by use of a +3.00 to +6.00 lens in the instrument, the patient being directed to look in various directions, whereby a foreign body may be brought into view against the red background of the fundus; approaching closer to the eye after the cornea and anterior chamber is examined in this manner, and then the lens, vitreous and fundus are successively investigated.

Diaphanoscopy is a means of rendering the eye ball luminous, whereby the shadow of the ciliary body, iris, tumor or large foreign body within the eye may be observed. I have a number of times determined the presence of foreign bodies behind the iris in the lens or in the fundus by this method, which were at first undiscernable by other methods.

The Roentgen ray is occasionally of service, not usually by the fluorescent screen, but preferably by the X-ray negative (the prints not usually being clear), to prove the existence of a foreign body within the eye, more especially those that are non-magnetic. The increasing use of magnesium and nickle-steel renders the number of non-magnetizable foreign bodies somewhat larger in proportion than previously.

The *giant magnet* is not only of use for removing magnetizable bodies within the eye, but is of value in their diagnosis. When the magnet is aproached to the eye containing magnetizable iron or steel, a drawing sensation, amounting to even decided pain, is felt. Needless to say such eye should not be anesthetized for such examination. At the same time the eye ball itself, or a portion, such as the iris may protrude, or a foreign body may come into view under the influence of the magnet.

The *sideroscope* or magnetic needle is not applicable in large cities on account of the constant vibration of buildings from passing traffic, as well as the vagaries of vagrant electric currents.

General Injuries.

Blows from blunt objects upon the eye or its surroundings may give rise to injuries varying from ecchymosis and swelling of the lids, fractures of the orbit, ecchymosis and hematoma of the conjunctiva or the orbit, rupture or dislocation of the eye ball, rupture and paralysis of the muscles, pressure upon the optic nerve from hematoma or even to rupture of the optic nerve or concussion of the eye ball, all of which may or may not be followed by permanent disturbance or loss of vision. Blows from blunt force may cause dislocation of the lens, rupture ot the iris or iridodialysis or radial tears of the iris, hemorrhage into the anterior chamber, into the vitreous, rupture of the chorioid or its dislocation and the same form of injury to the retina.

The treatment of all cases of this character is first, absolute rest in bed, ice compressing for two hours at a time, followed by one-half hour intervals, during which the eye may be lightly bandaged. This should be insisted upon in order to prevent extravasation of the blood, dislocation of the lens or of the retina until the parts again adhere and should be followed out even in cases seemingly only of the ordinary black eye. The symptoms due to extravasation of blood are attended with pain, tenderness, swelling and discoloration of the lids. Blows upon the frontal region or head may cause fracture of the base of the skull and show in the eye; more particularly fracture of the floor of the anterior cerebral fossa, which may be evidenced by bleeding under the conjunctiva into the lids with edema and extravasation of blood (Fig. 7) and of nose bleeding, in addition to the well known symptoms of cerebral concussion. (Within the limits of this paper I can only describe the more common injuries.)

The local treatment for the first twenty-four hours is ice compressing, then hot compressing for one-half hour of every three hours, which assists the absorption of the blood and the healing process. In practically all these cases the instillation of 1 per cent. atropin every three hours is advantageous to dilate the pupil, getting the iris out of the way and paralyzing the ciliary body so that, in the case of traumatic iritis or cyclitis, the pupil remains dilated and synechiae do not obtain. In most cases of injury of this character administration of alkaline purgatives is likewise advisable.

Traumatic exophthalmus may occur from hemorrhage into the orbit as well as from rupture of the muscles, and enophthalmus (Figs. 8-9) may follow. I have seen a number of cases of this character, one of them following an operation for lipoma of the orbit, in which the pressure of the hematoma caused an optic neuritis with resultant optic nerve atrophy. Pulsating exophthalmus (Fig. 10) is due to arterio-venous aneurysm within the anterior cerebral fossa, due to communication between the carotid artery and the cavernous sinus. It may be also due to aneurysmal dilatation of the ophthalmic artery, a communication between the artery and the vein in the orbit, or to thrombosis of the cavernous sinus, all save the last due to trauma. It is usually preceded by excessive muscular strain or an actual traumatism.

Burns and Scalds. These injuries almost invariably involve the lids as well as the eye. Burns from *flame* occur largely from furnaces and gas ranges and occasionally as a result of an explosion. They are usually only of the first degree, as the patient is enabled to get away speedily from the cause, although occasionally more serious injuries are met with (Fig. 11). The eye lashes, brow and hair are usually involved, but seldom the cornea. Burns involving the deeper structures of the skin are usually the result of *explosions* from gun powder, such as occur the Fourth of July, the majority due to criminal carelessness either of the injured party or of another person. The like may be said of blasting injuries. Both of these forms, attended by impaction of a large number of foreign bodies in the skin, may be into the eye in addition to the burn.

Treatment of these cases is based upon general surgical principles; aseptic cleansing of the skin with soap and water and a stiff brush, in severe cases under a general anesthetic, as thereby many of the foreign bodies may be removed, then the application of hydrogen peroxid solution, which loosens up the powder grains and forces them out of the skin wounds, then application of 33 1-3 per cent. of papoid in glycerine solution, which is allowed to remain from six to twelve hours. The papoid digests out the injured tissue, thereby permitting the charcoal to come out; afterwards a 5 per cent. boric ointment or zinc ointment, or a 2 or 3 per cent. picric acid application may be made. Carron oil also has its advantages. A few of the foreign bodies may have to be picked out with a spud. By such forms of treatment the tedious picking out of each individual powder grain or stain

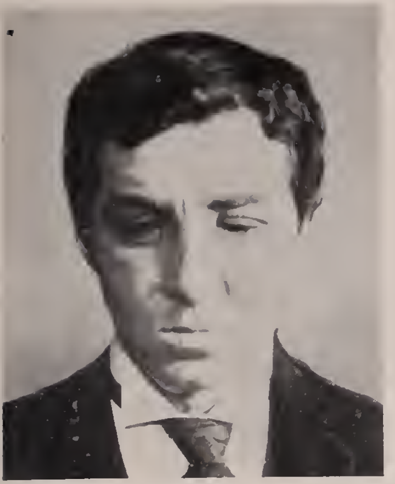

Fig. 7.
Edema of eyelids from fracture of floor of anterior cerebral fossa.
(Author's case.)

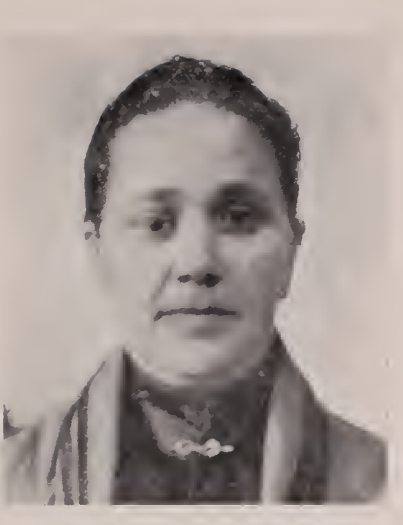

Fig. 8.
Enophthalmus following hemorrhage into orbit.
(Author's case.)

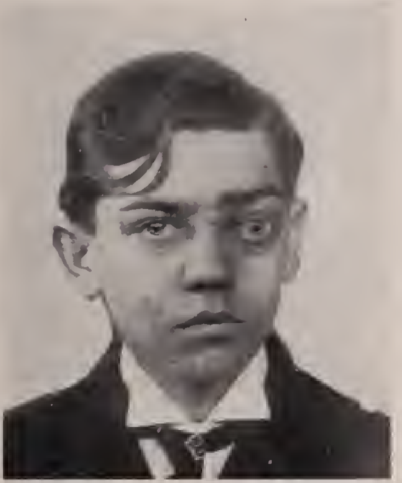

Fig. 9.
Double enophthalmus following fracture of roof of orbit and nasal bones.
(Author's case.)

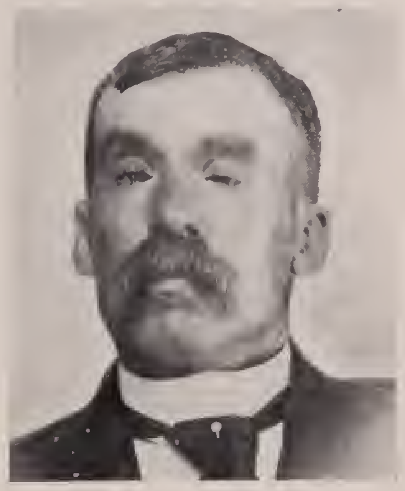

Fig. 10.
Pulsating exophthalmus. Ligation of common carotid. Recovery.

(Author's case.)

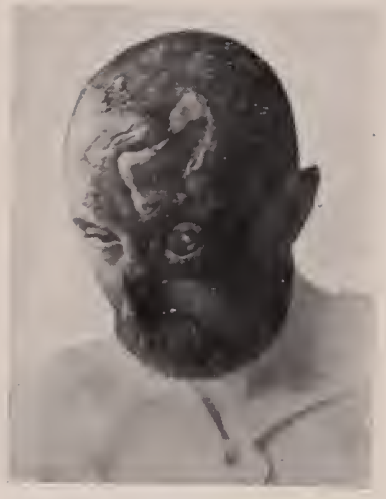

Fig. 11.
Severe burn on scalp, face and loss of one eye. Recovery.

(Author's case.)

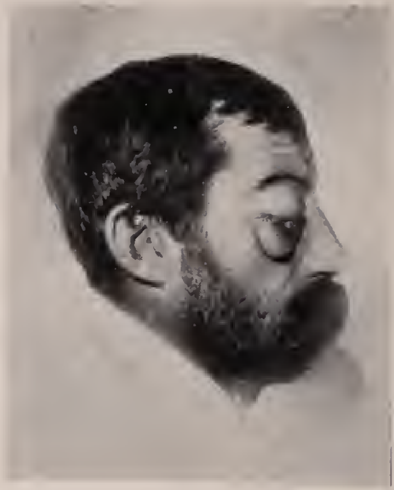

Fig. 12.
Panophthalmitis, orbital cellulitis following kick from boot heel. Enucleation. Recovery.
(Author's case.)

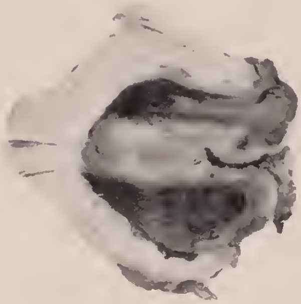

Fig. 13.
Photograph of microscopic specimen of Fig. 12. Note extensive swelling of sclera.
(Author's case.)

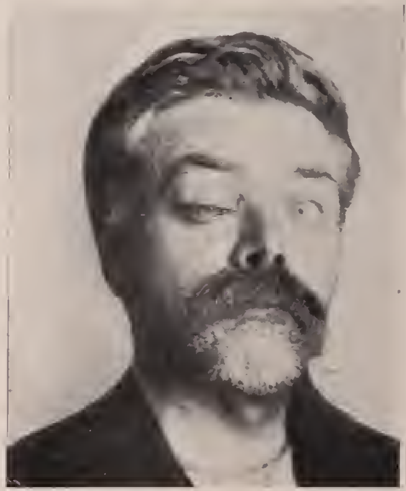

Fig. 14.
Abscess of lacrimal gland. Ptosis. Recovery.

(Author's case.)

is not necessary, and but few of the patients will have any special tatoo marks left to show for their accident. Foreign bodies or powder grains impacted into the cornea or in the conjunctiva will have to be picked out; in the latter the forceps and scissors are necessary. Local anesthesia by cocain or holocain should be used here. Sand and powder grains passing through the coats of the eye are usually aseptic and cannot be removed (vide infra.) Injuries from phenol (carbolic acid) may be immediately treated by a weak solution of alcohol followed by a bland ointment, such as 5 per cent. iodoform in olive oil.

Injuries from lime are of great importance; contrary to the usual belief, the injury is not caused by the heat of the lime for the effect of slacked lime is quite as disastrous. It is a chemical burn followed by infiltration of insoluble calcium into the tissues. I say insoluble to ordinary means. However, by copious washings with cold water and by the use of ammonium chlorid in 3 to 10 per cent. solution the calcium is rendered soluble and is carried off and thus severe damage to the vision is obviated.

Burns from electric light flashes usually obtained in short circuiting are due to the burning of iron instruments and are becoming more common. These are of the same character as ordinary burns and are treated in a similar manner. Electric light flashes may likewise produce a burn of the macula, the light being focused by the refractive media of the eye strongly upon the macula and thereby destroying the retinal elements. These always cause irreparable damage to vision. Burns from lightning flashes are occasionally met with and blindness usually results, either from severity of the burn, cataract or macular burns.

Minor injuries as foreign bodies under the lid, impacted into cornea, abrasions, etc., are noted later in this essay. They, however, constitute the larger percentage of eye injuries. Upon removal, antiseptic dressing and bandages they usually get well in twenty-four hours.

Incised, punctured and *perforating wounds* occur from sharp instruments. Among children, injuries from scissors and pocket knives are common. The air gun gives rise to many of these avoidable injuries and its use should certainly be prohibited. A foreign body causing such an injury may not have penetrated the eye and if so the prognosis is usually more hopeful. I have now in the hospital a lady struck by such a shot which has only produced hemorrhage into the vitreous,—but usually the shot penetrates and the eye is lost. It may likewise have passed entirely through the eye. I have had a number of instances of grains of powder passing entirely through the eye and many of flying pieces of metal which passed entirely through. Of course the prognosis in these cases is much better than if the object remained in the eye.

Foreign bodies within the eye are always of grave importance and despite the fact that we are enabled by operations in a considerable number of cases to remove them, yet the eye is almost invariably so badly damaged that loss of sight ensues or the eye ball has to be removed to avoid the danger of sympathetic ophthalmitis. In the removal of foreign bodies which can be determined to be within the globe, it is usually necessary to either enlarge the wound of entrance or to make another clean cut wound for the purpose.

Foreign bodies may at times be removed by the forceps if non-magnetizable or, if the latter, by the use of the magnet, the tip of which, in the majority of cases, need not be put within the globe, as the piece of iron may be worked around under the influence of the magnet until it will come out through the wound. In the majority of these cases, if the foreign body penetrates from the front, the iris and lens are likewise injured. In my rather large experince with such cases I have found but few instances in which I have been able to replace the iris, in the majority having to make an iridectomy to get the edge of the wound free to insure good healing, and this as a rule should be done. If the lens be severely injured it may be immediately extracted, but in the majority of cases a secondary operation, either discission or extraction is indicated.

The results of removal of foreign bodies from the interior of the eye are not as favorable as one would hope for from the primary result. A distinction may be made, however, if the foreign body be anterior to the posterior capsule of the lens and even if the lens be injured, removal may be made with resultant useful vision. A few cases of foreign bodies have been seen by me which remained in the lens not causing enough opacity to denominate the case "cataract" and which have been allowed to remain there for years with good vision, but as a rule such lenses become cataractous. Removal of foreign bodies from the vitreous chamber may be effected in a considerable proportion of cases with immediate fair results, but a large proportion go on to inflammatory changes with resultant loss of sight or a painful and dangerous eye which had better be enucleated.

INFECTIONS.

As before noted, the prognosis of penetrating wounds of the globe depends very largely upon infection. It is indeed fortunate that the majority of foreign bodies entering the eye ball are sufficiently aseptic not to give rise to suppuration. If, as is frequently the case, wounds of the eye be infected by the patient or by their associates attempting to remove the foreign body, keratitis, iritis and even panophthalmitis may result (Figs. 12-13). Suppurative adenitis of the lacrimal gland is a rare event, but I have seen such cases. The prognosis of all cases of infection depends upon the first dressing. This dressing is indeed simple. It should be flushing of the cul-de-sac with 3 per cent. boracic acid solution followed by the instillation of a non-irritating antiseptic. Of these I prefer 50 per cent. argyrol. Protrusions of the iris, shreds of membrane should be removed from wounds of the cornea.

If there be fear of infection the injection of a few drops of 50 per cent. argyrol solution into the anterior chamber, or the placing therein of a gelatin disk 50 per cent. iodoform is indicated, and in my hands has saved many eyes, even where pus had already appeared in the anterior chamber; 1 per cent. atropin solution should be invariably used. 1:3000 corrosive sublimate ointment (the White formula) should be applied to the edge of the lids; an aseptic bandage, and the patient should be put to bed, dressing to be replaced every twenty-four hours. If inflammation sets in hot compressing may be used after twenty-four hours. Subsequent operation for cataract or iridectomy may be indicated. The infection is usually of the streptococcus, in which case the prognosis is more favorable than in diplococcus infections. If hypopion forms, the Saesmisch-section through the cornea with removal of the exudate by lavage is used, followed by injection of 50 per cent. argyrol into the anterior chamber and atropin. Treatment by subconjunctival injections of normal salt solution and 1:5000 corrosive sublimate has saved some cases that might otherwise have lost an eye. Enucleation should be made if the case goes on to panophthalmitis, but as a rule should not be done during its height, but may be done if threatening or after the inflammation subsides, for the reason that we do not care to open up the lymphatics of the orbit and thereby run the danger of meningitis. As regards infection, it is fortunate that the inflammation in panophthalmitis results in a blocking up of the lymphatics and tissues of the ciliary region so that sympathetic inflammation rarely follows. We will take this subject up later.

Injuries from operations, such as cataract in iridectomy, for glaucoma, diplopia from muscle operations and infection, may happen in the practice of the most skillful surgeon. Such accidents are to be deplored but should always be guarded against in the prognosis given by the surgeon before the operation.

Operations and Treatment for Traumatism of the Ocular Globe and Adnexa. Recapitulation.

While the treatment of ocular traumatism is based upon general surgical principles, through either fear or ignorance on the part of the first attendant, the oculist seldom finds that they have been applied. Cases usually appear without any bandage and the history shows that little actual attention to the indications has been given. The essential treatment of such injuries is removal of the foreign body, cleansing and coaptation of the wound, followed in all cases by a proper occlusive bandage, which may be a cotton roller bandage or one of the special bandages adapted for the eye, a few special operative procedures, atropin to get the pupil open and quiet the ciliary muscle, dionin for the relief of pain, cold applications to prevent infiltration of the tissues by blood and hot applications to assist absorption of the exudates. A few operative procedures beyond those briefly described in the foregoing may be indicated. Among these are the closure of wounds of the sclera and cornea by a sliding conjunctival flap. It is seldom advisable to suture the sclera; the conjunctiva should be sewed over it and will retain the ocular contents just as well. A gaping wound of the cornea may be properly covered by the conjunctiva being cut entirely around the limbus and secured by a pouch stitch over the front of the eye. This stitch remains three or four days, when the cornea will be found to have coapted under it and the conjunctiva being allowed to slide back will reflex in the former location.

It is unwise, as a rule, to attempt anything else than properly carried out enucleation of the eye before sympathetic irritation of the injured eye. The substitutes for enucleation are evisceration with implantation of a glass ball, etc., and while they afford a larger stump, still, since the advent of the Snellen reform eye, we get as good a cosmetic result by its use after enucleation as we do from other substitutes. In a properly carred out enucleation the conjunctiva should be picked up in a pouch stitch, thereby securing immediate union and in no case except where drainage should be obtained on account of the pus formation, should the socket be allowed to granulate up as was formerly the practice. Should the socket become depressed later on, as commonly occurs from absorption of the orbital fat, injection of solid paraffin may be made to make a larger stump (Fig. 18). Other operations are advantageous in some cases for deformities resulting from accidents to the eye.

In conclusion, I call your attention to a series of 150 selected microscopic slides and 140 macroscopic specimens (2 series) in glycerin jelly of eyes that have been removed in my practice on account of injuries.

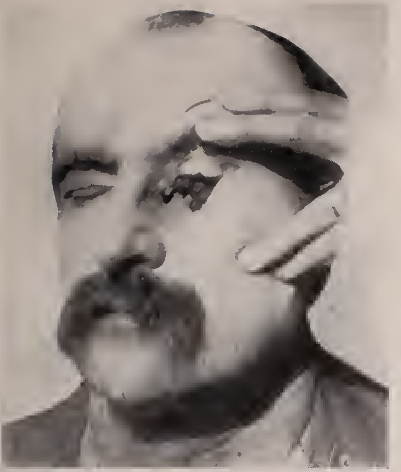

Fig. 15.
Patient in whom piece of wood passed through eye, orbit and nasal passages of pharynx. Recovery after plastic operations. See Fig. 16.

(Author's case.)

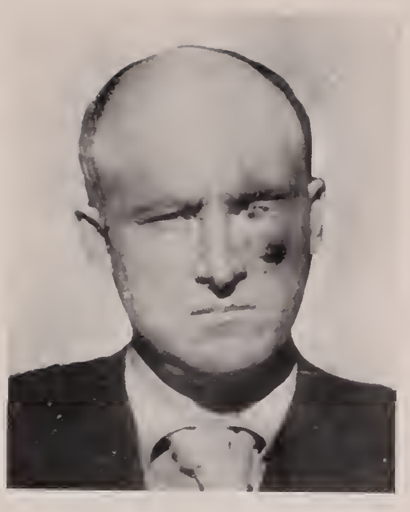

Fig. 16.
Same patient two weeks after plastic operations. Restoration of orbit and lower lid by large Wollf graft from arm, sliding grafts from temple and Thiersch grafts to lining of lids. Wearing artificial eye.
(Author's case.)

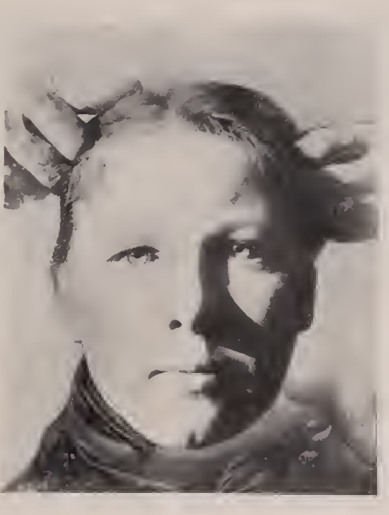

Fig. 18.
Results of paraffin prothesis, right side, to restore sunken orbit. Note the eveness of the two eyes.
(Author's case.)

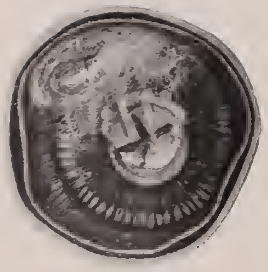

Fig. 19.
Photograph of microscopic specimen. Injury of ciliary region and lens. Ciliary exudate.

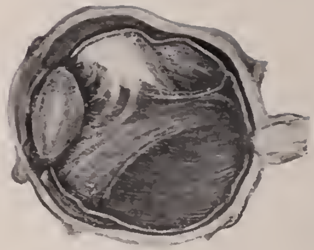

Fig. 20.
Injury to ciliary region and exudate.

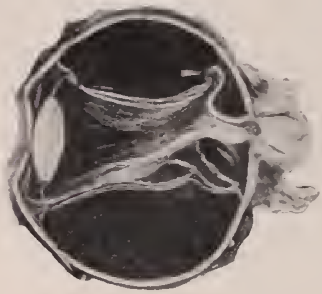

Fig. 21.
Subchorioidal hemorrhage. Hemorrhagic glaucoma.

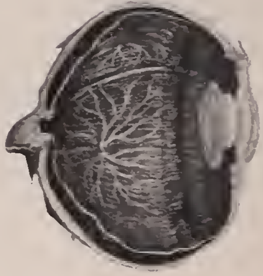

Fig. 22.
Secondary glaucoma following attempted cataract extraction.

The first three rows of macroscopic specimens show injuries to the ciliary region, removed on account of sympathetic irritation. The fourth row, ten specimens of various forms of exudates within the eye; the fifth row of foreign bodies within the eye which could not be removed except by enucleation. The sixth row injury followed by panophthalmitis, the seventh row, various forms of degeneration of the eyes. (Figs. 19-20-21-22.)

411-414 The White Building.

DISCUSSION.

Hamilton Stillson, Seattle: My crlticism of this paper is that it leaves me nothing to discuss. It is admirable, both in its timely practical advice and in the plain but exhaustive way in which the author puts the subject. Papers such as this will educate the public into conserving the eyes and will result in great economic improvement. Injuries to the eyes must depend upon the time, the place and the circumstances. In the western part of the state, for instance, we have many eye injuries peculiar to workers in wood. Swampers, buckers and snipers have injuries from twigs, leaves, fine spiculae from fir bark, etc. Bolters and sawyers have flying pieces of steel from sledges, and even saw filers are liable to receive flying particles of steel in their eyes, especially while "setting" their saws. Then, too, in our lumber mills the flying sawdust causes conjunctivitis, worse when working in cedar, for cedar dust seems more irritating than any other. We have many injuries in the mills from flying knots and slabs. In the cities peculiar eye injuries follow certain improvements. Some streets are paved with sandstone blocks. As these wear, there is produced a very fine, but sharp, dust easily blown into the eyes of pedestrians and, indeed, automobilists are quite liable to injury from this and similar kinds of dust. The street cars are to blome for their share of eye injuries, not only on account of the fine dust swirling through the air, but from fine particles of copper from the trolley and, on the elevated roads, fine particles of steel from the brakes fall into the eyes of the passers below. Electric ophthalmia from explosion of the blowout has been mentioned. It has not been stated, however, that the electric current itself has a peculiarly injurious effect on the eyes.

The florescin stain does not always stain fresh abrasions sufficiently. I have succeeded in a few cases by instilling oil or glycerin into the eye. The oil will cause slight iridescence around the foreign body. In the case of spicula of glass this method is preferable. Usually glass is exceedingly difficult to find. As to the X-ray, at least four exposures at different angles should be made, two of which should be stereoscopic and the negatives combined. Stereoscopic views will sometimes enable us to judge much more accurately. But negative results with X-rays should never be considered absolute evidence that no foreign body exists. As to the giant magnet used as a sideroscope, if the foreign body be very small, no tugging sensation may be experienced by the patient unless the current is opened and closed rather rapidly several times in succession. I consider this use of the giant magnet rather risky in the majority of cases. The author's advice as to treatment and operation is beyond further comment.

A CASE OF GALLSTONE DISEASE COMPLICATED WITH NECROTIC PANCREATITIS.*

By L. R. Markley, M. D.
BELLINGHAM, WASH.

During the evening of December 30, 1907, I was called to see Rev. Mr. H., age 39, the message stating he was suffering from very severe abdominal pains. I found a well-developed man of good physique, with a large muscular abdomen. He was in great pain, which I soon learned radiated from the gallbladder region. Also learned upon hasty inquiry, that he had his first attack of "cramps" seven years previously, that he had an attack about once a year since that time, each attack coming on suddenly, lasting for half an hour, pain very severe, leaving as suddenly as it came. Could not establish a clear history of following jaundice. The past year he had two attacks. The last six months his general health had not been up to its usual standard. Was getting very nervous, some digestive disturbances, depressed feelings, unusually irritable at times.

All this history was learned in a few moments. Even though a patient is in great pain I do not like to give an opiate until I feel quite sure of my diagnosis. Deep palpation over the appendix elicited no pain, but there was tenderness over the liver. He was bathed in a cold, profuse perspiration, pulse normal, no temperature, no evidences of shock. The second night previous to my call he had two attacks which his wife treated with hot fomentations. Each attack lasted about thirty minutes with an intermission of several hours. The following day being Sunday, he attended to his church work. Monday evening I was called, being the first physician that had seen him during an attack. He had consulted physicians after the attacks and all said they were due to some digestive disturbance. I gave it as my opinion that he was and had been suffering from gallstone colic. Feeling sure of my ground, I gave him a good hypodermic of morphin and atropin. As his pains got steadily worse, I began the administration of chloroform which he took nicely for an hour, when he fell into a quiet sleep.

I said before leaving that he would probably sleep from four to six hours. In this I was mistaken. At midnight I was called again, condition being about the same and treatment repeated. Hot fomentations were applied freely, patient soon falling asleep. I directed that he be given a good dose of castor oil in the morning, this to be followed with tablespoonful doses of sweet oil every hour until his bowels acted freely. I directed that he lie on his right side while taking the oil.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

In the afternoon of the following day he reported that the oil had not acted and that he was becoming averse to taking any more. Directed seidlitz powders and said I would call in the evening, when I found considerable abdominal distension, some general soreness, not severe, gallbladder area most tender, no jaundice, urine dark and scanty. Could hear no peristalsis. He looked fairly bright, with no temperature, pulse 80. I directed enemas during the evening and more oil in the morning, if he could take it, which he did. Getting no results from all this, I directed more enemas with epsom salts in the water and head low with hips elevated. No results, tympanitis increasing, slight rise of temperature, this the third day.

Now I gave him small doses of calomel and soda during the afternoon and evening, with salines in the morning of the fourth day. All this gave us no results; he had passed no flatus. I now tried the long rectal tube, passed the sigmoid and used a gallon or more of water with poor results. The following evening I again used the tube with better results but no high movement, temperature and pulse going a little higher which I attributed to autotoxemia.

The morning of the fifth day of complete intestinal paresis found tympanitis severe, frequent eructations of gas, not a true hiccough, no vomiting. At times he perspired profusely. He took a little liquid nourishment. Ordered seidlitz powders and again used the tube, washing away a small amount of very offensive fecal matter and we thought traces of oil. Shortly after using the tube this time he had a free fecal movement followed by a large amount of flatus.

The next two days we secured a number of very offensive stools, but the temperature and pulse remained above normal; very little abdominal pain. The following week the case resembled typhoid very much; temperature 100° to 103°, pulse 90 to 110. A short course of turpentine appeared to benefit him for two days, but the tympanitis and frequent eructations were annoying, despite the fact that his bowels were moving nicely. The tongue remained coated; he took some light nourishment; digestion was weak, no tenderness, tympanitis persistent, troubled with insomnia; at times perspiration profuse; fever ran an erratic course, no jaundice.

A peculiar feature of this case from beginning to the end was that every third day he would feel much better, and the day following would feel badly, but no change in temperature or pulse.

Still feeling that the temperature was due to autotoxemia, I tried salol for two days without results.

On January 12, two weeks from date of illness, a large induration became apparent in the median line, between the ensiform and umbilicus. This was a little tender. At my last call, two days previously, he was feeling better than at any time; temperature was under 100° and we all felt encouraged. As soon as I had carefully examined this induration, I felt that the proper thing to do was an exploratory operation, at least to determine the cause.

Dr. A. M. Smith was called and saw the case with me and urged immediate operation. We could not come to any conclusion as to what we might find, as he had not had chills, and the suddenness of its appearance precluded a large collection of pus at least. The location was not quite proper for a distended gallbladder but we thought of that as a possibility. As he had no symptoms of profound shock at the time of my first call for the severe pains, we ruled out a possible ruptured gallbladder. We were agreed, however, to go in and find out what the trouble was if possible. Dr. Kirkpatrick administered the anesthetic, giving ether. We asked the doctor to examine the patient after he was placed on the table but, after hearing a brief history of the case, he would not venture a diagnosis.

A large incision was made along the outer border of the right rectus muscle. We found a large mass of adhesions, peritoneum and mesentery greatly thickened, and yet the patient had suffered but very trifling abdominal pains. After careful search among the mass of adhesions and induration, we found a small recent abcess, containing an ounce of pus. This was located in front of and close to the pyloric end of the stomach. The left lobe of the liver extended four inches below its normal location. We had great difficulty in locating the gallbladder which was greatly atrophied, thickened, and filled with stones of a calcareous nature, not the usual dark and hard stones. The gallbladder was left open and attached to the peritoneum. We placed deep gauze drainage, closed the wound in part, and returned the patient to bed in fairly good condition. The drainage was profuse, saturating the dressings and bedding twice daily. Tympanitis persisted in spite of all we could do and bowel movements were good. He took considerable nourishment. Temperature ran a very erratic course, usually highest at night, once reaching 104 4/5°, but usually 102¼° as an average, pulse 115 to 125. The induration persisted and, as before operation, every third day he would feel fine, to be followed by a bad day.

He had a number of very profuse perspirations for which I gave him atropin; also quinin t.i.d., and strychnin t.i.d. by hypodermic. His stomach became irritable, appetite not so good, but no pains to speak of. He could never lie on his right side without inducing faintness. Somehow I always felt in doubt about this case because it ran such an unusual course, different from any case of gallstones I had ever treated or seen. He was never free from temperature, and pulse above normal. While tympanitis was pronounced continuously, there was but little pain, and the induration persisted in spite of the free drainage. Evidently there was some other pathologic condition present that we had not diagnosed.

Two days before death ended the scene he felt fine, temperature almost normal, pulse too high. He really did look better and our hopes were raised accordingly. Next day he was worse again, bowels obstructed, no movement of flatus or feces, tympanitis greatly increased, no pain, temperature just above normal with a rising pulse. He vomited frequently a very green vomitus that was offensive, with hiccough. Rectal tube was used without results; face took on a bronzed and anxious appearance. Next day the tube used again which removed some matter that was distinctly putrid, and perspiration was profuse. He gradually sank and died Jan. 22, sick a little over three weeks. Upon several occasions during his entire sickness he had spells when his finger nails would turn very dark and face became deeply cyanosed, lasting a couple of hours, pulse remaining good during these curious attacks.

We were fortunate in securing an autopsy next day. Adhesions were everywhere in upper abdomen; peritoneum and mesentery were greatly thickened; a large amount of pus and serum was removed that had its origin from behind the stomach. Dr. Smith suggested the evening he died that this might be a case of pancreatic trouble. He never had pain in the region of the pancreas, which organ we found completely gangrenous. It was completely broken down into a mass of debris, one or two small pieces having a dark, slaty color which looked as though there might have been small hemorrhages at some time into the glandular tissues.

This then was a case of gallstones, complicated with necrotic pancreatitis. I am quite sure this rare case had its inception six months or a year previously when his wife first noticed his changed temperament, nervousness, irritability, gastric symptoms with indigestion. I do not think the severe colics he had during the past seven years were due to hemorrhagic pancreatitis, as none of the attacks were followed by severe shock. I think the pancreas became infcted from the diseased gallbladder which I stated above was filled with stones and greatly atrophied. This infection probably caused slight hemorrhages, and finally a condition of necrosis supervened. As the gland was completely destroyed by the necrosis, I am inclined to think this had been going on for some time, possibly several months, and an acute condition setting in with the severe attacks of colic when I first saw him.

I am confident that diseases of the pancreas are often overlooked. I believe the pancreas should be considered when a patient comes to us with pain or tenderness on deep pressure in the epigastrium, these cases certainly not all being gastric as we too often think. I confess that in the future I shall bear the above case in mind.

The pancreas is a small gland five or six inches long and weighing about three ounces. It lies deeply in the epigastric region, almost directly behind the stomach and close to the spine. We should, therefore, bear in mind that pancreatic pains are more deeply situated than gastric, too deep to palpate except in very thin subjects. The pain is so near the spine it may be diagnosed as a "backache or kidney disease" by the patient or his friends. The above case had considerable backache from the first time I saw him which may have been caused by the diseased pancreas; if so, it was the only pain the disease caused.

The main pancreatic duct, or canal of Wirsung, enters the second part of the duodenum in common with the bile duct, three or four inches below the pylorus. This close relationship of the two ducts is now considered responsible for the infections of the pancreas or gallbladder, one by the other, as the case may be. It appears that both organs are often diseased, which being primarily diseased is not easy to determine, probably the gallbladder most frequently. The pancreas is almost surrounded by large blood vessels, the vena cava, left renal vein and artery, aorta, mesenteric and splenic arteries, and splenic vein. The gland itself is richly supplied with blood from three different sources. All lie close to this little gland. This, with the depth of the organ behind the stomach and transverse colon, makes it a very difficult organ to operate upon and none but the most seasoned surgeon should attempt it.

Diseased conditions of the pancreas were not generally recognized until recent years. I will briefly describe a few of the more common diseases of this gland.

Pancreatic hemorrhage or apoplexy. This occurs usually during or past middle life, mostly in males who are alcoholics. These cases have nearly all previously suffered with "indigestion." The suddenness of the attack and the severe pain in the epigastric region are no doubt often mistaken for gallstone colic, gastralgia, intestinal colic, etc. Soon there is severe, persistent nausea and vomiting. This is followed by all the symptoms of profound shock that does not usually occur in the above named conditions. In most cases the abdomen becomes greatly distended and very tender in a short time. If the hemorrhage be severe, death usually occurs within a few hours. Gallstone colic with rupture, intestinal obstruction, gastralgia, gastric and duodenal ulcers with perforation, must all be considered, each, however, having some distinguishing symptom that I have not the time to mention. Prognosis is bad in all severe cases of hemorrhage, death soon ending the scene. If the hemorrhage be not severe, the patient may survive to become a case of pancreatitis. The treatment is unsatisfactory except to relieve the pain.

Acute pancreatitis. There are three distinct varieties: (a) the acute hemorrhagic, (b) the acute suppurative, (c) gangrenous. In acute hemorrhagic pancreatitis the symptoms are not so severe as in pancreatic apoplexy. The hemorrhage is not as severe, death does not occur in so brief a time. We must bear in mind that all varieties of pancreatitis are attended by a high mortality. This form of the disease is very often associated with gallbladder disease, the infection probably extending from one organ to the other. The close proximity of the two ducts of the liver and pancreas appears to be an unfortunate anatomic condition, whereby disease of one or the other is likely to occur. If the patient survive an attack of the acute hemorrhagic variety three or four days, he may possibly recover, but the cases are rare.

Acute suppurative pancreatitis is fortunately a rare disease, and still more difficult to diagnose than the hemorrhagic form. "Patients suffering with this disease very quickly develop the symptoms of sapremia or septicemia, usually have irregular rises and falls in temperature, profound sweats and chills; they present the profound depression of the general system that is so characteristic of blood poisoning." It is safe to say most cases are not diagnosed during life.

Gangrenous pancreatitis usually follows the acute hemorrhagic form of the disease; it may be partial or complete. It may follow the suppurative variety, sometimes caused by an injury. The necrotic pancreas has a dark, slaty appearance. In many of these cases the gland has more or less completely disinterigated and the remains or debris lie in a pool of pus in the omental cavity. After the necrosis has well advanced, there are symptoms of septicemia, with a tender tumor-like mass in the upper abdomen. You will observe that the postmortem findings of the case above reported correspond with the description of necrotic pancreatitis.

Cystic tumors of the pancreas are rare, some assuming large size. Treatment briefly is: exploratory operation, suture of sack to edges of incision, drainage with gauze or tubing. Tubercle, gumma, carcinoma, etc., involve the pancreas. Fatty diarrheas and jaundice are early symptoms of tumor. Pancreatic calculi are rare, seldom diagnosed. The pain is similar to and usually diagnosed as gallstones. An interesting case was reported before the State Association and calculus exhibited several years ago.

In a recent paper on pancreatic disease, by Mayo, he lays considerable stress upon a careful examination of the stools for diagnostic purposes. The finding of undigested fats and muscle-fiber, with unusually large stools, appears to be a point well worth considering.

DISCUSSION.

H. H. McCarthy, Spokane: This case was evidently one for surgical treatment from the outset and the result would probably have been different had it been so considered. I have seen two cases of this kind. They were both of hemorrhagic origin, as is probably true of all of them. They should be subjected to an abdominal section, made above the umbilicus, for purposes of diagnosis and treatment.

C. O. Reed, East Sound: When the pancreatic fluid escapes, there is digestion of the surrounding tissues, which should suggest the origin of the trouble.

J. R. Yocum, Tacoma: This condition was evidently one of acute infection. In this condition the employment of drugs that increase peristalsis is contraindicated. Therefore, their use in this instance was not good treatment.

J. E. Else, Pullman: This case teaches a lesson as to the necessity of operating on gallstones. Had this patient been operated upon seven years earlier, when gallstones alone were present, it is probable the pancreas would not have been affected and this fatal termination might have been avoided.

Frank Rose, Spokane: If the stools had been observed carefully and been found to contain fat of a light yellow color, disease of the pancreas might have been suspected. It is the pancreatic juice that fixes the stain and causes the bile pigment to remain in the bowel contents. Another point of diagnosis might have been the presence of sugar in the urine. I ask for information if sugar would be found in case of acute pancreatitis which did not involve all the islands of Langerhans.

Dr. Markley, in closing: This patient had no icterus from the time of his first attack, seven years ago. Objection has been made to the use of the term gastralgia. It is true neuralgia is only a symptom, but whether of the stomach or other organ it demands relief as soon as possible. Operation seven years ago would probably have cured this case, though I do not favor indiscriminate operating on the gallbladder, as it does not remove the constitutional causes of faulty metabolism. The urine was not examined microscopically nor the feces. As he had suffered from colic for seven years, we did not suspect the pancreatic disease found at the autopsy.

RELATIVE VALUE OF A MEDICAL AND SURGICAL DIAGNOSIS OF OBSCURE INTRA-ABDOMINAL DISEASES.*

By R. C. Coffey, M. D.
Portland, Ore.

What apples are to fruit, what wheat is to grain and what beef is to meat, the family physician or general practitioner is to the practice of medicine; namely, the principal staple which all people must have. Special fruits, special breads, and special meats are good for many, but by no means essential for all.

Highly specialized doctors who do nothing but eye practice, or ear practice, or who do nothing but stomach diseases or rectal diseases, or who limit their work to the chest or lungs, or who do only gynecology or abdominal surgery, are fancy articles, relished by many, wisely used by many, but by no means essential to the great majority of people.

The family physician is as essential to the community, as wheat, apples or beef. He must be exceedingly versatile on all subjects, if he succeeds as a family physician. At four A. M. he attends an obstetrical case; at seven he attends a scalded patient; at eight he is called to see a man who has pneumonia; at 7:30 he sees a case of diphtheria; at ten he sets a fractured leg; at 11:30 he is called to see an acute attack of appendicitis, upon which he immediately operates.

By experience the general practitioner soon learns to take in these situations quickly, and can make a rapid diagnosis of all the foregoing conditions. In fact, so shrewd does he become in these lines of work, that he is able to make a diagnosis much more certainly in the same length of time, than would the highly trained specialist, who must figure by a mathematical scale. In the afternoon of the same day, this busy family physician is supposed to see fifteen to thirty people, some of whom have simply come in to report the condition of the acute case seen in the morning or the day before; one child has had the earache for a month and receives a prescription; another has a pain in the top of the head and receives a prescription; another comes with chronic digestive troubles, and about all the general practitioner can do in the way of investigation, and do justice to his other patients is, let me see your tongue; how is your appetite; where is your pain; condition of your bowels; do you sleep well; do you have sour stomach? Diagnosis, indigestion.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

The next week this same patient comes in with slight improvement, the next week possibly a little more, the next week stationary, the next week slightly worse and the next week just as when the doctor started. Some kind of a change must be made. Many doctors will make some radical change and try different medicines, and others who are more frank will at once say, I have not the time or facilities for making a proper investigation of your case, I would therefore suggest that you see a specialist who has facilities for all the mathematical means for making a diagnosis.

The question then comes into the mind of the family physician, shall I send this case to an internist, a surgeon or a neurologist, in as much as I am unable to determine whether this case is a cancer, a functional digestive trouble, or whether the trouble is purely nervous or psychic. The physician at once begins to debate in his own mind about as follows: if the case is a beginning cancer, I fear that the internist will temporize with a diet treatment until the cancer is so far advanced that surgery will be of no avail. If I send the case to a surgeon, he is likely to determine that the patient has appendicitis, gallstone, gastric ulcer, or something of the kind and, going with the bent of his mind, may possibly do a surgical operation on a neurasthenic, which not only subjects the patient to danger but threatens to engraft the surgical habit on him.

If the physician finally sends his patient to an internist, the latter will give him a thorough physical examination, will examine all his secretions and excretions, test his blood, his diet, his digestive power by test meals, and will spend many hours to make an examination. He will then take all these findings and, like a judge passing on all the probabilities and improbabilities, forms his deduction in a logical manner, based on anatomy, physiology, pathology, and a large postmortem experience; for, perchance, the internist has been trained in an ultra scientific school of internists, and would therefore scorn the opinion of a surgeon as being a mechanic, and of having lost his logical powers.

The internist might make a diagnosis of chronic colities or achylia gastrica, or something of this nature. In a majority of cases he may be correct, but he may make the same diagnosis in an early cancer and in many cases induce this patient to go on trying one thing after another, until the glands in the neighborhood are involved, and obstruction of the gastric and intestinal lumen has taken place, when it is found that it is too late to relieve conditions which, when first seen by the internist or neurologist, could have been entirely cured.

On the other hand, he figures that, if the case should prove to be of the functional type and should be in the person of a neurasthenic, the ultra mechanical surgeon, who is always of the "Missourian type" in that he must see, would immediately suppose that the patient had a gastric ulcer, chronic appendicitis, gallstones, or some very serious malady or, if there were no positive evidence of the patient having either, there was enough, probably, of it to justify an immediate exploratory operation. The patient might not have any of these conditions, but might be suffering from neurasthenia, and by this surgical operation the patient might be made worse. So the physician has all of these things to argue in his mind before he decides what he will do with his patient.

We must all admit that the thorough training of the internist develops a peculiar logic, resembling the cunning of an Indian, like all those who must depend upon such knowledge. He is inclined to pity the surgeon for his lack of logic.

On the other hand, the surgeon, like the "Missourian," must be shown. He calls to mind pictures of many cases of gastric cancer or other malignant forms of diseases, which were at one time curable, but which have been treated by the scientific internist until all hope was gone, or in which the patient's gallstones have been dissolved dozens of times, until the patient reaches him with a stone impacted in the common duct, and with the conditions which mean more serious trouble for the patient who has not had operation suggested until this time, notwithstanding the fact that there is no positive evidence that gallstones have ever been cured, or materially benefited by medical means. Consequently, the surgeon distrusts the diagnosis made by the ultra scientific internist, for he has seen the case from inside; he has a mental picture of the obstructed ducts, or of the cancer in its actual state of growth. So the surgeon, if he has doubts, immediately suggests an exploratory operation, sometimes unnecessary, but he feels that even then he has done his patient little or no harm.

The question of the general practitioner is, which of these men will he risk to make the investigation. Shall it be the man who has fine scientific attainments, who has a trained, shrewd intuition and mind, but who rarely sees the inside of the abdomen, or will he trust the surgeon who has the actual experience, who has seen the results and conditions which produce the symptoms, but may be too radical in his opinions. Someone may come forward with the suggestion that the general practitioner who is a surgeon is the man, but when we reach that point we go back to our first picture, in which the man sees so many things, whose time is so thoroughly taken up that he has not the time for thorough investigation and logical deductions, as is the case with the internist, nor has he the time to search the literature to investigate as to what actually occurs after operation, or mingle largely with his fellows at societies, as is the case with the surgeon or internist.

In other words, he is the busy practitioner who, by his large experience, has learned to make rapid and relatively accurate diagnosis, in the more apparent classic conditions. But he finds himself very seriously handicapped, when it comes to dealing with the obscure intra-abdominal conditions which cannot be seen or felt. Consequently the only rational means to arrive at the best diagnosis is in frequent consultation between the family physician, internist, surgeon, neurologist. The surgeon should insist that the internist be present and witness as many of the surgeon's operations as possible.

But the key to the whole situation is a thoroughly reliable scientific laboratory, which is supported by the internist, the surgeon, the family physician and the neurologist and which should be independent of all. The internist must have his laboratory work done by a thoroughly reliable laboratory man. If he is thorough, he may then make his deductions which, as afore stated, are liable to be biased and seen through the internist's eyes. The surgeon must have laboratory findings of the same kind, and will make his deductions from the standpoint of the surgeon who, for the reasons stated above, is likely to be seriously mistaken. It is at this time that the two should come together and discuss matters, each from his standpoint in connection with the laboratory man or his findings and, if possible, from that of the family physician. In this way the patient has the very best possible opportunity to gain justice and health. Thus the physician and surgeon learn to respect each other more; both learn of the absolute necessity of the laboratory man; the latter learns the lack of reliability of laboratory findings, and the family physician soon learns that the case of simple dyspepsia or constipation per se, in the sense ordinarily used, is much more rare than he had supposed.

How are these conditions to be brought about? The general practitioner and the internist can live in any community, but how about the laboratory man. Until very recently we have never had an absolutely reliable laboratory equipment in Portland nor until recently did we all combine to develop a reliable laboratory. In the first place, the Oregon state board of health employed two young men to do the work of the state board of health. They worked night and day, until finally they were taken in as assistants at the medical college, at first I believe without pay, and finally with some remuneration. Soon they began to be useful to the college and the professors began to patronize them, at first paying them very little. Then individuals began to patronize them and recognize their work. They went abroad and prepared themselves thoroughly for laboratory work, until finally they have reached the stage that we have in Portland one of the finest laboratories to be found in the country and well manned. I believe I am safe in saying that practically every important man in the practice of medicine or surgery in Portland sends work to the laboratory of the Matson brothers. Thus the doctor feels assured that he is receiving a reliable laboratory opinion and each specialist, after getting reliable laboratory findings, can look at the subject from his own standpoint and when he meets others in a consultation the patient is likely to get justice.

What this paper is intended to say is, that the general practitioner, whose time is taken up with the multitude of his duties, is not prepared to ferret out the intricate problems of the obscure abdominal cases. The internist is not always safe, for the reason that he takes great pride in his logic, based upon too little experience from actual demonstration. The surgeon is apt to be rash, because of the ease and safety of an exploratory operation. The laboratory man is not safe when left alone, because of the many features of diseases which have weight, but which have not been shown in the laboratory.

Conclusions.

1. A persistent and obscure chronic abdominal condition, which does not yield to treatment in a reasonable length of time, is out of the province of the average general practitioner or family physician and should be referred to a specialist.
2. The specialist will be either an internist, surgeon or neurologist.
3. If the patient is below the usual cancer age (say 38) and presents no evidence of obstruction of any kind, it is safe to refer the case to the internist who should call the surgeon if he fails to give relief, or finds a surgical condition.
4. If the patient is in the cancer age (from 38 upward) and is gradually losing weight or presents symptoms of obstruction of any kind, the case should be referred to a surgeon who should call an internist in consultation in case of doubt.
5. If the patient presents other nervous features aside from the abdominal trouble the neurologist should be called.

ERRATUM.

In the issue of Dec., 1908, on page 412, in the article entitled "The Diagnostic and Prognostic Value of the Leucocyte Count in Surgical Diseases," the fifth step of the technic of the stain should read, methylene blue 2 seconds, instead of 20 seconds.

NORTHWEST MEDICINE

THE JOURNAL
of the
WASHINGTON STATE MEDICAL ASSOCIATION.
Publication Committee: C. H. Thomson, M. D.; C. W. Sharples, M. D.;
L. H. Redon, M. D.

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Published Monthly by the Washington Medical Library Association.

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Editorial and Business Office - Marion Building, Seattle, Wash.

Subscription Price, $2.50 per annum in advance. Single Copies, 25 Cents.
Foreign Countries, $3.00 per annum.

Entered March 14, 1903, at Seattle, Wash., as Second Class Matter, under
Act of Congress of March 3, 1879.

VOL. VII. MARCH, 1909. NO. 3

PROGRESS OF THE NEW MEDICAL ACT.

There has been much interest throughout the state, during the past month, in the consideration of the medical act before the House at Olympia. Early in the session the osteopaths were vigorously engaged in urging the passage of a measure to give them a separate examining board. When they were convinced that the composite board, as provided for in the medical act, gives them fair treatment, their representatives at Olympia united with Dr. Beach, the father of the bill, in urging its passage. Then developed a curious situation. Against this combination of medical and osteopathic interests were arrayed the only other two regular physicians in the legislature who have worked most industriously for its defeat, each stating that he would favor it if amended to gratify an interest in which he was personally concerned. In other words, the board principles concerned in the act and the regulation of the practice of medicine for the benefit of the public and the medical profession which it contemplates, were to be sacrificed to gratify minor personal interests. The bill passed the House, however, by a large majority and there is every reason to believe it will also pass the Senate and become a law. There has been much criticism of the act for including osteopaths on the examining board and thereby recognizing them as practitioners. Any careful observer will understand that osteopaths have become established as a feature of medical practice in this country. Hitherto they have practised without restraint in this state, thus being superior to medical practitioners and not amenable to the law as not being recognized by it. Is it not preferable to recognize their presence, to control them as other practitioners and compel them to prove their possession of the medical knowledge which they profess, or otherwise be subject to prosecution for illegal practice? In this action Washington is in line with the solution of the question of osteopathy which is taking hold of other parts of the country. California has demonstrated the satisfactory working of this plan. Oregon proposes to follow the same policy. A bill with the same provisions for a mixed board of examiners is also before the parliament of British Columbia. The greatest evil of osteopathy today is found in the horde of fake and quack followers of this cult and this act affords a means of identifying and eliminating these offenders. The medical profession of this state should recognize the position occupied by Dr. W. M. Beach, of Shelton, as the valiant champion of medical interests in the legislature. He is a recognized leader in the House and his views on all matters pertaining to public health are received as authoritative. The successful enactment of this melical act will stand as the result of his influence and leadership.

THE PROGRAM FOR THE SEATTLE MEETING.

Inquiries have been received from various sources concerning the program for next summer's meeting, in reply to which a further explanation is offered. The desire to avoid a crowded program led the committee to limit the number of papers to five for each session of each section. As there will be three meetings of the sections on medicine and three on surgery, fifteen papers will be prepared for each. These were distributed among the different associations, giving five in each of these sections to Washington, four in each to Oregon and three in each of the two to Idaho as well as British Columbia. These ten papers from Washington have been distributed among the different county societies with the aim to have all sections equally represented and with the hope that each will offer the best and most interesting papers available. It was planned to have five papers for each of the two sections on ophthalmology. The arrangement for these has been referred to the Puget Sound Academy of Ophthalmology and Oto-Laryngology, of which Dr. J. A. MacKinnon, of Seattle, is president, by whom the papers will be distributed among the four associations in the manner that is considered equitable. The section on genito-urinary will be under the supervision of Drs. G. S. Whiteside, of Portland, and G. S. Peterkin, of Seattle, who will arrange for five papers, distributed in accordance with their judgment. There will be two guests from the East. Dr. James R. Herrick, Professor of Medicine at Rush Medical College, will deliver the address on medicine, while a well-known surgeon will present an address on surgery, whose name will be announced next month. The committee believes this plan will provide sufficient scientific entertainment, without a surfeit of good things, and leave abundant time for other forms of enjoyment.

ORGANIZATION FOR THE TUBERCULOSIS WARFARE.

The widespread interest in fighting tuberculosis and the many efforts inaugurated for this purpose in different parts of the state suggest the desirability of all persons engaged in this work getting together on a uniform plan of action, in order to prevent a waste of useful activity and to accomplish more satisfactory results in different communities. The plan that has been established in King county seems to promise well for effectual work. The Anti-tuberculosis League of King County has been formed, which becomes a branch of the state association. It will care for needy tuberculosis patients within its jurisdiction and, for its support, will secure members who will pay membership fees and annual dues. A certain portion of receipts will be turned over to the parent state association to help carry on its peculiar work. This will consist entirely of agitation and education by means of public meetings and illustrated lectures, also the distribution of literature wherever it may be needed. This will be accomplished in part through the agency of the Pacific Coast Journal of Tuberculosis, on whose subscription list the members will be placed by virtue of their membership in the state association, through their membership in the county organization. At the same time all memberships in the state association hitherto secured by its labors will be transferred to the county organization. Thus there will be co-ordination of work between the two associations without interference of either in the field of the other and they will mutually strengthen each other's efforts. During the coming year the state association will be in a position, in co-operation with the state board of health, to present a series of illustrated lectures and exhibits that will prove interesting and instructive, and ought to materially aid in building up the local anti-tuberculosis societies. This plan of organization is to be recommended to other counties where interest in this tuberculosis agitation exists, in the hope that whatever has been found useful in one city may likewise be utilized in others.

The Winter Examination of the Washington Board. At the Spokane examination, Jan. 5-7, 94 applicants appeared, of whom 70 were successful, giving 21 per cent. of failures. Twenty-one had been in practice ten or more years. Eight received their medical education in foreign schools, four being Canadian and one each from Australia, France, Germany and Greece. The applicants were registered as coming from the following states:

Alabama, 1; California, 1; Colorado, 2; Iowa, 1; Illinois, 6; Idaho, 3; Indiana, 4; Kentucky, 2; Kansas, 1; Montana, 2; Massachusetts, 3; Missouri, 2; Michigan, 2; Minnesota, 1; New York, 2; North Dakota, 1; Ohio, 3; Oregon, 2; Pennsylvania, 3; Utah, 1; West Virginia, 1; Washington, 41; Wisconsin, 1.

The names and addresses given by the successful licentiates are as follows:

Alley, A. G., Mt. Vernon.
Anderson, W. H., Seattle.
Anthony, X. L., Stockett, Mont.
Babcock, O. D., Seattle.
Barrow, R. B., Daisy.
Boone, W. H., North Yakima.
Born J. A., Valleyford.
Burson, H. C., Tekoa.
Butts, C. E., Meyers Falls.
Colloran, J. E., Seattle.
Cornwall, D. E., Moscow, Id.
Danks, A. I., EholtJunction, B. C.
Davidson, C. F., Seattle.
Dawson, J. T., Georgetown.
Donoho, Philip, Joplin, Mo.
Fischer, W. C., Harrington.
Flannigan, O. A., Davenport.
Forbes, R. D., Seattle.
Gage, W. H., Seattle.
Gaunt, P. F., Oconto, Wis.
Hammond, W. D., Spirit Lake.
Hollingsworth, I. P. P., Spokane.
Henderlite, P. S., Drummond, Mont.
Jackson, R. G. Victoria, B. C.
Judah, J. S., Seattle.
Kulp, J. S., Seattle.
Laws, C. E., Monroe.
Long, L. D., Seattle.
Long, T. H., Tacoma.
Lundgren, A. R., Spokane.
MacCabe, Arthur, Seattle.
McKinney, M. W., Pt. Townsend.
Mighell, Winfred, Colville.
Mowery, H. C., Wallace, Id.
McMurdo, P. F., Yacolt.
Munson, D. L., Seattle.
Nather, F. B., Spokane.
Neu, Carl, Seattle.
O'Brien, H. B., Tacoma.
Olds, W. A., Jr., Medical Lake.
Orr, C. H., Colorado Springs, Col.
Osborn, J. M., Seattle.
Paxton, T. O., Seattle.
Phelps, F. W., Roslyn.
Phifer, F. M., Tacoma.
Porter, E. H., Fort Worden.
Post, J. O., Clear Lake.
Pratt, F. S., Portland, Or.
Prescott, C. I., Seattle.
Rankin, A. H., Edwall.
Riggs, C. F., Spokane.
Robb, Isaac, Spokane.
Sawyer, E. D., Spokane.
Scott, W. B., Seattle.
Searcy, G. H., Spokane.
Sells, D. F., Spokane.
Shaw, B. W., Tacoma.
Shepard, F. L., Seattle.
Silverberg, C. W., Seattle.
Smith, W. R., Walla Walla.
Taylor, W. J., Port Angeles.
Twiss, H. I., Bellingham.
Walker, J. A., Spokane.
Warner, W. H., Spokane.
Way, E. A., Govan.
White, E. W., Spokane.
Whitten, H. H., Peoria.
Wolf, O. K., Salem, Ore.
Wood, N. P., Seattle.
Windell, J. D., Minot, N. Dak.

OBITUARY.

Dr. Charles E. Hoye died in Seattle, Jan. 24, from chronic nephritis. He was born in Delaware County, N. Y., in 1868. At the age of 18 he taught school for a few years and then studied medicine at the University Medical College of New York, graduating in 1890. In the fall of that year he began practice with his brother, Dr. J. E. Hoye, at Auburn, Wash. Next year he settled in Seattle. He has practised most of the time for the past 18 years in or near that city. He was in charge of the county hospital from 1894 to 1896. During the two following years he had charge of a hospital for a mining company in Alaska. He was coroner of King county from 1900 to 1904. Then for three years he was surgeon for a mining hospital at Ravensdale, Wash., returning to Seattle in 1907. He was a man of happy disposition and had many friends. He was known as a skillful physician and worthy citizen, whose loss will be mourned by all who knew him.

Dr. J. R. Smith died at Vancouver, Wash., Jan. 14, from chronic nephritis. He was born in Peoria, Ill., in 1844. When eight years of age he moved to the Willamette valley. He taught school on the Indian reservation for a number of years and later served in the First Oregon cavalry during the civil war. In 1878 he graduated from Willamette medical school and settled in Vancouver, where he has practised continuously since then. He was mayor of Vancouver from 1881 to 1888 and was coroner for several years past. For years he was the only physician in the community and had a wide acquaintance throughout the country, where he was known as a highly respected citizen and a physician who was a friend of all. He is survived by a wife and six children.

Dr. J. S. N. Starr died at Wilbur, Wash., Jan. 27, from disease of the heart, after an illness of four days. He was born in Indiana in 1840. At four years of age he moved with his parents to Wisconsin. He served through the war as sergeant in the hospital corps. After the war he entered Rush Medical College, from which he graduated in 1872. A year later he joined the regular army as surgeon. In 1887 he settled at Snohomish in this state. After several years he moved to Spokane and, in 1908, settled in Wilbur, where he maintained a hospital and drug store, as well as attending to general practice. He was prominent among the Odd Fellows. He was recognized as a good man, an able physician and a useful member of the community.

Dr. Albert Keefe died at Georgetown, Wash., Jan. 3, at the age of 71. He graduated from Cooper Medical College, San Francisco. About twenty years ago he practised in Seattle, after which he settled in Snohomish, where he remained for many years. About two years ago he moved to Georgetown, where he practised and had a drug store. He is survived by a widow and two children.

REPORTS OF SOCIETY MEETINGS.

CHEHALIS COUNTY MEDICAL SOCIETY.

President, D. A. Schumacher, M. D.; Secretary, D. C. Wise, M. D.

The regular annual meeting of the Chehalis County Medical Society was held at Aberdeen, Jan. 4. The following officers were elected for the ensuing year: President, G. E. Chamberlain, Aberdeen; vice-president, A. J. McIntyre, Hoquiam; secretary and treasurer, C. E. Bartlett, Aberdeen; censors, W. B. Wells, Hoquiam; I. R. Watkins, Aberdeen; E. P. French, Elma.

KING COUNTY MEDICAL SOCIETY.

President, Grant Calhoun, M. D.; Secretary, L. H. Redon, M. D.

The first regular semi-monthly meeting of the King County Medical Society was held at the Medical Library, Seattle, Feb. 1, President Calhoun being in the chair.

PAPERS.

Tuberculosis of the Spine. F. J. Fassett read this paper, in which he gave the history of twelve cases and exhibited two clinical cases. He laid special emphasis on early diagnosis, for only at this stage will treatment prevent deformity. Apparatus for the alleviation and control of deformities was exhibited and its use demonstrated. He stated the percentage of cures was between 70 and 80, if the diagnosis were made early. The paper was discussed by P. W. Willis, who said that if a patient complained of a train of obscure symptoms, tuberculosis should be suspected and either confirmed or disproved before any treatment is begun. J. H. Lyons discussed the use of tuberculin as diagnostic aid. H. E. Coe referred to the treatment of abscess complication and its treatment. G. S. Peterkin stated that sometimes the genito-urintary system is at fault when a diagnosis of tuberculosis has been made and cited a case in illustration. E. E. Heg said that bone infection may be caused by human, as well bovine bacilli and discussed the action of tuberculin in the body.

Flexner's Meningitis Anti-Serum. S. A. Owens read this paper, in which he stated the value of the serum for cerebrospinal meningitis is unquestionable, but it must be given early in the disease. If possible, the diagnosis should be confirmed by demonstration of the diplococcus. G. B. McCulloch, in discussion, reported results in 21 cases, of whom six had died, all of whom were treated late in the disease. Some cases will prove fatal, even when given the serum early. The serum should be given till all diplococci disappear from the spinal fluid. S. V. R. Hooker stated that the public dread of the disease had subsided since the results of the serum treatment had become known. He said we should not rely on the macroscopic appearance of the serum for diagnosis, as this is often deceptive. A. F. Heavenrich explained recurrence of meningitis as due to the fact that after the diplococci have gained entrance to the ventricles the closure of the foramen of Majendi causes the action of the serum to become much weakened. H. E. Coe said the dosage should be regulated by the severity of the case, rather than by the age of the patient.

Contract practice was discussed in accordance with the resolution passed in Nov., 1908. After the expression of views for and against radical action, a motion was adopted that all previous action of the society concerning this subject be rescinded and that the Committee on Admission and Ethics be instructed hereafter to disregard the fact whether an applicant is doing contract work.

In accordance with a motion, which was adopted, the president appointed a committee of Drs. Read, Sullivan and McLoughlin to act in an advisory capacity to the Health Department of the city.

In accordance with a motion adopted, the president appointed a committee of Drs. Carroll, Peterkin and Wiltsie to present resolutions on the death of C. E. Hoye.

J. B. Eagleson presented the following amendment to the by-laws, to be considered at the next meeting: Chap. 5, Sec. 5: "This society shall not use any of its funds for or encourage the use of alcoholic liquors of any kind at its social functions."

E. B. Burwell and J. W. Richardson were elected to membership. The following were proposed for membership: H. E. Coe, F. N. Chessman, L. Klemptner, E. R. Kelley, A. P. Lensman, J. T. Mason, D. M. Murray, C. R. Rorabaugh, H. B. Thomson, W. C. Woodward, H. V. Wurdemann.

The second regular semi-monthly meeting of the society was held at the Medical Library, Feb. 15, President Calhoun being in the chair.

CLINICAL CASE

Paralysis Agitans. Alfred Raymond presented a man of 65 with this disease, most marked in the right hand. He described the usual symptomatology of this condition and discussed its obscure etiology. The case was discussed by D. A. Nicholson and C. A. Smith.

Fracture of Greater Tuberosity of Humerus. B. Hahn presented a man who had sustained a dislocation of the humerus. Radiographs showed also an impacted fracture of the greater tuberosity. He considered the limitation of motion due to cicatrization of the capsule and surrounding tissues. In this case he considered operative interference contraindicated. A. O. Lee expressed doubt as to complete restoration of function in these cases and that a guarded prognosis should always be given. Also that subsequent paralysis is common. E. F. Taake called attention to the loss of function that sometimes follows these injuries in persons of neurotic temperament, against which one should always be on guard. Dr. Kulp stated that it is customary in the army to discharge men who have sustained a dislocated shoulder, since so few recover complete function. A. C. Crookall believed that in all cases of shoulder injury a definite diagnosis should be made by radiograph. E. O. Jones advocated massage and passive motion as giving best results in treatment of such cases. H. J. Davidson stated that the literature shows that the majority of shoulder dislocations are complicated by fracture.

PAPER.

Lactic Acid Ferments in Treatment of Autointoxication. B. S. Paschall read this paper, giving the laboratory tests and results of examination of three lactic acid ferments on the market, with demonstrations of their relative efficiency. Where indican is found in the urine, these ferments are of value. A. F. Heavenrich stated that much is being done along these lines, but that it is still in an experimental stage. A. Lensman spoke of the Bulgarians being a long-lived race, perhaps due to their consumption of sour milk.

PATHOLOGIC SPECIMENS.

Uterine Fibroids. J. B. Eagleson exhibited a series of fibroids obtained by operation, giving an interesting description of each.

The amendment to the by-laws, eliminating liquors from the menu of future society banquets, was debated at length, being supported by Drs. Eagleson, Canfield, Underwood, Randell, Thomas, Davidson and W. A. Shannon; and opposed by Drs. De Beck and Heavenrich. It was adopted by a vote of 58 ayes and 17 nays.

In accordance with a motion, which was adopted, the president appointed the following committee to make necessary arrangements for entertainment of the state associations at the meeting in Seattle next summer: W. A. Shannon, C. W. Sharples, P. W. Willis, G. M. Horton, P. vonPhul, J. H. Lyons, G. S. Peterkin, C. B. Wood and J. B. Eagleson.

The committee on resolutions presented resolutions relative to the death of Dr. C. E. Hoye, which were ordered to be spread upon the minutes, also to be engrossed and a copy sent to the family of the deceased.

LEWIS COUNTY MEDICAL SOCIETY.

President, B. G. Godfrey, M. D.; Secretary, Charles Harden, M. D.

The regular annual meeting of the Lewis County Medical Society was held at Chehalis, Feb. 1. The following were elected as officers for the ensuing year: President, B. G. Godfrey, Chehalis; vice-president, E. L. Kniskern, Centralia; secretary, Charles Harden, Chehalis; treasurer, Thos. Primmer, Centralia. The society is in good condition and is doing good work.

SKAGIT COUNTY MEDICAL SOCIETY.

President, C. C. Harbaugh, M. D.; Secretary, Winston Appleby, M. D.

The annual meeting of the Skagit County Medical Society was held at Anacortes, Jan. 22. The society passed a resolution favoring reciprocity with other state examining boards having standard requirements and against separate examining boards in this state. Three new members were elected to membership.

The following officers were elected for the ensuing year: President, G. B. Smith, Anacortes; vice-president, A. J. Osterman, Mt. Vernon; secretary-treasurer, A. L. Brandt, Mt. Vernon; censors, M. B. Mattice, Sedro-Woolley; A. C. Lewis, Mt. Vernon; W. Appleby, Anacortes.

WHATCOM COUNTY MEDICAL SOCIETY.

President, S. H. Johnson, M. D.; Secretary, J. R. Morrison, M. D.

The Whatcom County Medical Society met in regular session at the Baker Hotel, President Johnson being in the chair. Minutes of the previous meeting were read and adopted. Dr. Kirkpatrick read a communication which he had received from Drs. Read and Yocum of the State Legislative Committee, asking the support of the society for the bills before the legislature which the above committee believe to be to the best interest of the profession. The secretary was instructed to write each senator and representative from this district requesting their support for such measures.

Management of Normal Labor. L. R. Markley read a very interesting paper on the subject, bringing out many of the causes of delay, with their treatment. The paper was discussed by several of the members present, and many interesting points presented. Dr. Birney led the discussion on the report of cases of eclampsia. He reported five, describing the peculiar conditions and treatment of each case. Two were not pregnant, one of them being 55 years of age, the other younger, but each showing typical conditions of eclampsia. This was followed by a report of cases by all the members present, with a general discussion.

Surgical Work in New York. W. H. Axtell read this paper, in which he referred to the success of the eastern surgeons, but thought results obtained by surgeons on the coast were equally as good.

WHITMAN COUNTY MEDICAL SOCIETY.

President, W. B. Palamountain, M. D.; Secretary, J. E. Else, M. D.

The Whitman County Medical Society met in Colfax Feb. 1. Members present were Boyd, Balsiger, Bumgarner, Cardwell, Else, Mitchell, Palamountain, Stuht and Victor. A communication from Dr. Yocum was read relative to proposed medical legislation now before the legislature. The secretary was instructed to write each member of the legislature from Whitman county, asking them to oppose any bills providing for separate boards of examiners and against the bill favoring a reciprocity and asking them to support the bill introduced at the request of our legislative committee.

Paper.

Obstacles to Be Met in Obstetric Practice in the Country and How to Overcome Them. W. A. Mitchell read this excellent paper, dealing with those obstacles that occur in every physician's practice. In discussion Dr. Boyd asked what were the objections to the hyoscin-morphin-cactin tablet. He said that in his practice he had an increase in number of postpartum hemorrhages from them, but had observed no other ill effects. Dr. Cardwell said that the H.-M.-C. tablets cause the patients to be delerious, delay labor and he had seen blue babies.

Dr. Stuht said the important thing in repairing tears was to take plenty of stitches and take them deep.

Dr. Victor cautioned against frequent vaginal examinations.

Dr. Else said that the most important points in preventing lacerations of the perineum were: (1) Retard the descent; (2) Deliver between pains; (3) Deliver on the side; (4) Chloroform.

Dr. Palamountain said that he had abandoned the H.-M.-C. tablets and now uses morphin and hyoscin in the tablets, as found in the drug stores. He thinks that in many cases where there is no tear of the mucous membrane, there is a submucous tear which is even worse.

Dr. Mitchell in closing said that in his experience H.-M.-C. prolonged labor and, although the patient slept between pains, it did not usually lessen their intensity. He has had some difficulty in getting the babies to breathe after its use.

BOOK REVIEWS.

Edited by
KENELM WINSLOW, M. D.

Surgery: Its Principles and Practice. In five volumes. By 66 eminent surgeons. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Phila. Phila. Volume IV. Octavo of 1194 pages, with 562 text-illustrations and 9 colored plates. Philadelphia and London: W. B. Saunders Company, 1908. Per volume: Cloth, $7.00 net; Half Morocco, $8.00 net.

The present volume, the fourth of this system, covers in a general way abdominal, and genito-urinary surgery, and the surgical diseases of the eye and ear. Most of the objections which have been raised against the modern system of composite authorship apply with full force to this book. A few of the chapters, however, are of such excellence and bear so unmistakably the stamp of the individuality of their authors, that they make the work a valuable addition to surgical literature. Among the chapters chiefly to be commended are the one on Prostatic Surgery, by Young; on Appendicitis, by Murphy; and on Tropical Surgery, by McCaw. Edsall contributes a chapter on Examination of the Urine in Relation to Surgical Measures, which is extremely conservative in tone and gives much good advice on the real value of urinary analysis in surgical conditions. The authors are to be commended for devoting such a relatively large amount of space to diagnosis and the indications for and against operative procedures. The book is handsomely gotten up, is profusely illustrated, and each chapter is followed by a fairly complete bibliography. Jones.

General Pathology. By Dr. Ernest Ziegler, Translated from the 11th German Edition (1905). Edited and brought to date by Aldred Scott Warthin, Ph. D., M. D. Cloth, 604 illustrations, 781 pp. New York. Wm. Wood & Co., 1908.

This translation is made of the 1904 edition. Dr. Warthin, taking into account the immense strides made in the last few years in the study of the "newer pathology," added the results of recent researches in Roentgen irradiation, heredity, phagocytosis, opsonins, malignant neoplasms, tuberculosis, syphilis, spirochetae, etc. The student and practitioner find here gathered the latest views of Ehrlich, Metchnikoff, Adami and others. In this volume the author deals with the general conception of pathology in its relationship to the phenomena of normal physiology. Altered function is the watchword. The great question of etiology, immunity, the sequelae of disease, autointoxications, bacterial infections, questions of grave practical importance are discussed, numerous examples given, and the present-day point of view presented. Questions still under discussion, tropical medicine, diseases of metabolism and the newer conceptions are given, and a lot of the old ballast thrown overboard. One will certainly be richer in medical culture upon a perusal of this work, searching out at least the chapter dealing with the relationship of pathologic findings and function during life, or an intelligent conception of general symptomatology. The numerous illustrations and bibliography leave nothing to be desired. LENSMAN.

A Text-Book of Genito-Urinary Diseases. By Dr. Leopold Casper. Translated and Edited with Additions, by Charles N. Bonney, B. S.,

M. D. Price, $5.00. Cloth, pp. 645. 230 illustrations, 24 full page photos. P. Blakiston's Sons & Co., 1012 Walnut Street, Philadelphia.

Within a period of less than two years a second edition of this well-known text-book has been published. This fact in itself reflects great credit on both the author and the translator. Simplicity and sincerity characterize each and every page of the work. Tedious and superfluous details find no place. Only those points which have proven to be of value are set before the reader and discussed in such a manner that they can be duly appreciated and used to advantage. The general section on examination of the patient, physical methods of examination, with detailed descriptions of the various instruments used, should be carefully studied. The vital importance of this section cannot be overestimated in the management of genito-urinary affections and it is given the emphasis it deserves. The writer's liberality of mind is exemplified in his free quotation of both American and European authorities. Their operations are described and at times commented on.

The plates and illustrations are numerous and harmonize well with the printed matter, in that they are both highly instructive and excellent in detail. As a text-book it has no superior and is warmly commended to those who come in contact with genito-urinary diseases.
REDON.

American Practice of Surgery. Editors, Joseph D. Bryant, M. D., L.L.D.; Albert H. Buck, M. D. Complete in 8 volumes. Profusely illustrated. Vol. V. William Wood & Co., New York. Cloth. 965 pp.

This volume is devoted to the surgery of the head and neck. There is nothing printed in the English language superior to the chapter on "Surgical Affections of the Head," by Archibald. The subject is so clearly put and so exhaustively described that it is enough for any surgeon up to date. The chapters on the eye, ear, nose and throat are also good and practical, but for the specialist in these branches the technical work are better. The chapter on "Pyogenic Diseases of the Brain" follows in the wake of the classic volume of MacEwen. A word of commendation should be said of the chapter on the larynx. Taken altogether, volume five has its place among the very best working books of the age.
BURNS.

Practical Points in Anesthesia. By Frederick-Emil Neef, B. S., B. L., M. L., M. D., New York. Price Semi-De Luxe-Cloth 60 cents, post paid. Library De Luxe Ooze Flexible leather $1.50 post paid. Surgery Publishing Co., 92 William St., New York, U. S. A.

There are many good suggestions in this little book of 46 pages, although much that does not appeal to the reviewer. Morphin-anesthol appears to be the favorite form of anesthetic with the author. Anesthol is a chemical combination of chloroform, ether and ethyl chloride and is preceded by one-fourth gr. of morphin one-half hour before the operation. Considering the remarkable success with the drop method of ether—17,000 anesthesias without a death by Alice Magaw—one is not tempted to trifle with new anesthetics. The description of the use of a breathing tube, in recession of the tongue, and the employment of a tube for anesthesia, when the cone method is contra-indicated, is interesting. Among the subjects covered are: Induction of anesthesia, cardiac and respiratory collapse, when shall the patient be declared ready for operation, maintenance of the surgical plane of anesthesia, important reflexes, vomiting during anesthesia, obstructed breathing, use of the breathing tube, indications for stimulation, influence of morphin on narcosis, general course of anesthesia, awakening, recession of tongue after narcosis, post-operative distress, minor anesthesia with ethyl chloride, intubation anesthesia, etc., etc.

WINSLOW.

International Clinics. Volume III. Eighteenth Series, 1908. J. B. Lippincott Co., Philadelphia and London, $2.00.

In the present volume of this well-known quarterly we find, as always, many monographs of interest. The article on perforation of the intestine in typhoid fever contains some beautiful photographic plates and the paper is of much value. The article on the value of esophagoscopy should prove illuminating. Drs. Gibbon and Despard write an exhaustive paper on Melanotic Neoplasms. The Treatment of Fractures by Internal Splintage is instructive. The treatise on Adenoma of the Thyroid Gland should be read by all in view of the distinctions made in treating different varieties of goitre. The work, as usual, is one of the most valuable reference books for progressive physicians. WINSLOW.

International Clinics. Volume IV. Eighteenth Series, 1908. J. B. Lippincott Co., Philadelphia and London, $2.00.

The articles in this volume are classified under Treatment, Medicine, Surgery, Gynecology and Obstetrics, Hygiene, Neurology, Laryngology, Pediatrics and Pathology. Among the notable papers are the following: The Treatment of Gastric Ulcer based upon Results of One Hundred and Forty Cases; ; A Brief Study of Gout, including Treatment; Splanchnoptosis; Acute Dilatation of the Stomach; Fractures of the Skull; Personal Observations on Bier's Hyperemia, and many others. What we have said about the previous volume applies as appropriately to this one. WINSLOW.

Modern Medicine, Its Theory and Practice. Edited by William Osler, M. D., Regius Professor of Medicine in Oxford University, England; formerly Professor of Medicine in Johns Hopkins University, Baltimore. Assisted by Thomas McCrea, M. D., Associate Professor of Medicine and Clinical Therapeutics in Johns Hopkins University. 900 pp., illustrated. Volume V, Diseases of the Alimentary Tract. Cloth, $6.00, net; leather, $7.00, net; half morocco, $7.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

Volume five of Dr. Osler's System represents a tremendous amount of work. The literature has been ransacked to give the greatest amount of available knowledge on the subject matter and the newer data on the diseases in question have been incorporated. The work is good and extremely complete, having something to say upon every known disease of the organs included in the alimentary tract. The style of the text is such as will appeal to the student, or the practitioner wanting a hurried reference of some disease. There are page after page of facts with a little more elaboration than that found in Dr. Osler's Practice. The practitioner who wishes to study a disease will be disappointed. He will miss those long exhaustive articles one is accustomed to find in similar systems of practice which, after reading, leaves the feeling that there has been learned all that is known of the disease. He will feel the lack of the bibliographies to guide him farther in his researches. The sections on diagnosis are weak, while those on treatment are too often a dogmatic laying down of rules, rather than a clear elucidation of the principles which should govern treatment and the measures used in following them. Dr. Friedenwald's chapter on gastric neuroses is good, and Dr. Opie's section on pancreatic diseases is excellent and deserves careful reading. HEAVENRICH.

Progressive Medicine. A Quarterly Digest Edited by Hobart Amory Hare and H. R. M. Landis. Vol. IV. Dec., 1908. Lea & Febiger, Philadelphia and New York. Price, $6.00 per annum.

In this volume is to be found a review of Diseases of the Digestive Tract and Liver and Pancreas, by Edsall; Diseases of the Kidneys, by Bradford (John Rose); Surgery of the Extremities, Tumors, Surgery of the Joints, Shock, Anesthesia, and Infections, by Bloodgood; Genito-Urinary Diseases, by Belfield; and Practical Therapeutic Referendum, by H. R. M. Landis.

Bloodgood affirms that local anesthesia is sometimes productive of more danger from its general effect (syncope and psychic) than that caused by general anesthesia. He thinks a small dose of scopolamin (gr. 1-150—1-100) with gr. ⅛ morphin is of service as preliminary to ether, but does not countenance total anesthesia by this method and advises strongly against the use of spinal anesthesia. Under arthritides, Bloodgood offers us a most simple and satisfactory solution of the perplexing question of etiology. He classifies all under special infections as tuberculous, syphilitic, gonorrheal, typhoid, pyogenic, pneumoccocic, etc., except the arthritides due to traumatism, gout (urate of sodium), scurvy and purpura (joint hemorrhage), tabes and syringomyelia (joint strains), and the chronic non-tuberculous arthritides.

Landis deals with drugs and other therapeutic means. He shows that antidiphtheric serum, when given in repeated doses, should be injected daily, and not at more infrequent intervals, to avoid anaphylactic dangers. Flexner's antimeningitic serum is just about as successful as diphtheria antitoxin, if given before the third day. Balsam of Peru is held up as of great value in wounds likely to harbor the tetanus bacillus—it encloses and kills them and favors extraordinarily local leucocytosis. WINSLOW.

Atlas and Text-Book of Human Anatomy. Volume III., completing the work. By Prof. J. Sobotta, of Wurzburg. Edited, with additions, by J. Playfair McMurrich, A. M., Ph. D., Professor of Anatomy at the University of Toronto, Canada. Quarto of 342 pages, containing 297 illustrations, mostly all in colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $6.00 net; half morocco, $7.50 net.

The third and last volume of Sabotta and McMurrich's Atlas fulfills the high promises held forth by earlier issues of the work. In its present volume the arteries, the veins, the nervous system, the lymphatics, the sense organs, the external or common integument, regions of the human body and general remarks concerning the construction and development of the human body are considered. The plates are characterized by the same clearness and definiteness which formed so valuable a characteristic of the other volumes and provide for the practitioner who does not have access to dissecting material, a means of refreshing the memory which cannot fail to be of great advantage.

NORTHWEST MEDICINE

THE JOURNAL OF THE
WASHINGTON STATE MEDICAL ASSOCIATION.

April, 1909

ORIGINAL CONTRIBUTIONS

SURGICAL COMPLICATIONS OF TYPHOID FEVER.*

By S. W. Mowers, M. D.,
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In the evolution of medicine and with the better understanding of the cause of disease, our treatment has become better defined. Certain diseases clearly belong to the internist, others as clearly to the surgeon, while some must be treated by both. Typhoid fever has, perhaps, been the most prominent and apparently the most firmly intrenched of the diseases belonging to medicine. Yet we are beginning more and more to appreciate the fact that certain complications and sequellæ may develop which call for the aid of the surgeon and which may demand that aid more surely and promptly than many of the so-called surgical cases. It is not my purpose to deal with some of the more common surgical complications, such as hemorrhage, phlebitis, parotitis, furunculosis and bed sores, which occur so frequently in the course of the fever, but rather with those surgical complications which require operative interference and treatment.

Diseases of the Bone. The most common complication is periostitis with necrosis, osteitis and osteomyelitis. These are rare complications, occurring in from .5 to 1.3 per cent. of cases.

Periostitis is the most common lesion during the course of the disease, coming on earlier than the other forms. These complications occur most commonly in the ribs, clavicle and bones of the extremity. There are rarely any constitutional symptoms, the local symptoms being redness over the affected area with pain, tenderness and swelling. The disease is very chronic in type, and when suppuration occurs it is of the nature of a cold abscess. A sinus may develop and a fenestrum may form. The prognosis is good, but these cases are very chronic in type and any operative measures should be thorough, and one should always bear in mind the danger of a mixed infection.

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*Read before the Washington State Medical Association. Walla Walla, Wash., Sept. 9-11, 1908.

Typhoid Spine. This interesting condition would come under this head. The symptoms usually follow a mild attack of the fever, coming on as a rule within three weeks. Neurotic features are common. The most prominent symptom is pain, felt in the lower dorsal and lumbar region, usually radiating around the body or down the legs, and may be severe. Rigidity and fixation of the spine, with tenderness, kyphosis and swelling of the soft parts may be noted. Reflexes may be altered with muscle spasm and disturbances of sensation. The disease is very chronic.

McRae divides these cases in three heads:

(1) Those where the hysterical features predominate. (2) Those with periostitis or perispondylitis. (3) A group with definite changes and hard to separate from the second and usually following it. It is characterized by deformity and rigidity, and the radiograph shows definite changes.

Arthritis is a rare complication and is accompanied by pain, swelling and redness. It may be persistent and the resulting thickening of the joint may remain for some time.

Gangrene is a very rare complication. It is most commonly associated with bed sores, but there are conditions of extensive gangrene reported, not associated with bed sores and which may be present either with or without a clot in the blood vessels. The most frequent location is in the extremities, though it may occur on the head, face, trunks and genitals. According to Keen, who reports a number of cases in his monograph, the condition is due to the altered blood, the weakened heart and mechanical difficulties in carrying on the circulation, especially in distant parts. It usually occurs during the end of fever when the patient seems to be entering on convalescence.

The first symptom is usually pain, severe and persistent, radiating to the periphery, followed by numbness, coldness and a loss of sensation, and in a short time the gangrene appears. It occasionally progresses upward till the entire limb may be involved. Death may be sudden, but usually weeks will elapse. Treatment consists in stimulation of the circulation, wrapping the extremity in cotton, stimulation and care of the general health. As the gangrene is usually of the dry type, nothing should be done surgically till the line of demarcation has formed, unless septic symptoms supervene. Recurrence of the slough in the stump is common. Where amputation is not possible free incisions and removal of sloughing tissue should be made to prevent absorption.

Pleurisy occurs in about 1 per cent. of the cases. It usually occurs during the course of the disease, and in some cases the symptoms are so pronounced that the disease is known as pleuro-typhoid. It may develop with high fever, severe pain in the side and a well marked friction rub is heard. It is usually of a fibrinous type, but there may be an effusion, either serous or purulent. The typhoid bacillus has been found alone in the effusion, but is usually associated with the pneumococcus.

Perforation is the most serious frequent complication and occurs in from 2 to 3 per cent. of the cases. Post-mortem it is found as a cause of death in about 12 per cent. of the cases. It is most frequent during the third week, but may occur during the first or after convalescence is well established. The usual site of perforation is in the ileum, but it may occur in any part of the bowel and may be single or multiple.

The onset is usually sudden with severe abdominal pain, usually paroxysmal, coming on with short intervals. The seat of the pain is usually in the lower part of the abdomen, sometimes around the navel, or in the right iliac fossa. There is usually marked tenderness on palpation over the entire abdomen with localized tenderness and a rapidly developing rigidity of the abdominal muscles, shallow respiration and, later, obliteration of the liver dullness. There may be nausea, vomiting, sweating and pallor and the general symptoms of shock. There is, as a rule, a steady increase in the number of leucocytes, though there may be an initial rise, which may remain stationary or even decrease temporarily. There will be a rapidly developing peritonitis. It must be borne in mind that, with patients who are profoundly toxic, with the so-called "typhoid state" well marked, the symptoms may be partially or entirely obscured.

The treatment is purely surgical, and prompt opening of the abdomen with closure of the perforation, cleansing of the viscera and drainage are indicated. General stimulants should be freely administered. The question of recovery without operation is not to be considered. Very rarely perforations may be closed by adhesions or by the omentum, but this is so rare that it should not be used as an argument against operation.

Peritonitis from other causes than perforation is very rare. It may occur by extension from the ulcer or from some suppurating process, as a suppurating mensenteric gland or a ruptured appendix. It may also occur from pelvic conditions. It has been claimed that there may be a passage of bacteria through the intestine which, however, would be extremely rare. The treatment would be similar to that resulting from perforation, with the treatment of the causal trouble.

Gallbladder Disease. This is a condition to which our attention has been called but recently, but one which is fairly common and is very important, as it not only occurs during the course of the disease, but is responsible for a great many cases of gallstones developing long after the disease has disappeared. During the course of the disease typhoid bacilli are probably always present in the gallbladder and they may persist for years after an attack. Instances occuring 14, 17 and 18 years afterward are on record. They may be present in the gallbladder as a local infection without the patient ever having had an attack of typhoid fever. Pratt has collected five cases of this kind.

Often during the attack there may be no symptoms. When cholecystitis occurs during typhoid it may be present in any grade, from a mild catarrhal condition to ulceration and perforation. The inflammatory condition may be so intense that there may be a local peritonitis set up with or without perforation and with adhesions. The time of the occurrence is variable and may develop during the height of the attack or after convalescence is established. Usually it occurs during the third week or later. As a rule, it comes on with sudden pain in the region of the gallbladder or epigastrium. There may be a chill and vomiting. It may develop more gradually with a feeling of pain and discomfort in the epigastrium, the tenderness later becoming localized in the gallbladder area. There may be extreme tenderness in the entire right side of the abdomen, particularly in the upper quadrant, with rigidity of the rectus muscle. The gallbladder may be palpable. Pulse rate is increased and temperature elevated. There is usually a leucocytosis varying from 10,000 to 20,000. Perforation needs no additional discussion, as the symptoms would be similar to those following perforation of the bowels with peritonitis.

The course of the disease may be very variable. In one of the cases I have to report there was a gradual improvement, followed by a recurrence of the acute symptoms with final perforation of the gallbladder. In another case the severity of the symptoms increased steadily and rapidly till operation.

The question as to time of operation is a difficult one. Some cases will recover without operation, while others will surely die. If the patient's condition is such that we can judge of the pain and tenderness, if he is where he can be carefully watched and where an immediate operation can be performed, then it is usually safe to wait.

For the pain and tenderness an ice bag or hot stupes can be used. Morphin should never be given, and tapping the gallbladder should never be done.

I can not do better than quote McRae: "If the symptoms are acute and the signs pronounced, especially if progressive, operation is the safer course," and I may add should be done immediately. The gallbladder should be opened and drained. In case of doubt as to the condition, exploration should be done, as it means little added risk and may prevent later regret.

Case 1. S. F. B., 44. American, conductor. Treated by my predecessor, Dr. Allan. Admitted to hospital Aug. 12, 1905, with typhoid fever. He ran a very severe course of fever with a number of hemorrhages and a marked post febrile mania. He recovered from the disease with the temperature running normal after Sept. 16. On Oct. 12, 61 days after admission to hospital, he complained of pain in right side and later developed a marked periostitis of the sixth rib, accompanied by tenderness and swelling and redness of the skin. Operated Nov. 9 and sixth rib was resected. Later other ribs became involved and eventually five were resected, all on the right side. He made a good recovery, but was off duty more than a year after the original operation.

Case 2. A. P., 20. German, laborer. Was in hospital from Oct. 29 to Dec. 22, 1907. He was admitted with diagnosis of typhoid fever, which ran a very severe course. Nov. 1 he had a hemorrhage, and between that date and Nov. 26 he had a number of severe hemorrhages. Between Nov. 21 and 25 he had occasional doses of ergot, taking one-half oz. in all.. By the latter date the patient was very much emaciated and the general vitality was very low, temperature 101°, pulse weak and compressible, ranging from 100 to 128. Nov. 28, 30 days after admission to hospital, he complained of pain in the legs, particularly in the left, and examination showed tenderness along the posterior tibial artery. Dec. 4 a small necrotic area appeared on the outer side of left foot, about one inch anterior to the malleolus. The following day the entire dorsum and the plantar surface of the heel of the left foot and the entire dorsal surface of the right foot were purple and gangrenous looking. Under treatment the right foot improved and gradually cleared up, excepting the first, second and third toes. There was no improvement in the left foot, the parts affected gradually becoming gangrenous, the skin and subcutaneous tissue being involved. Owing to his weakened condition and the fact that he was showing no symptoms of absorption, no operative interference was done, but incisions were made for good drainage. His temperature fell to normal and his pulse was good, but death resulted Dec. 22.

Case 3. N. T., 30. Japanese laborer. Was admitted to the hospital Jan. 4, 1908. He was not able to speak English, and no history of the disease could be obtained. He was transferred by a local surgeon, with a diagnosis of typhoid fever and ran a typical course of fever. Examination of thorax on admission was negative. He had an old sinus of the neck which was due to the breaking down of a tubercular gland. During the course of the disease he developed a suppurative otitis media.

Feb. 14 the temperature was nearly normal and the patient was apparently entering on convalescence. Feb. 22. He has been running a temperature of 102°. He has not been complaining of any pain, but a routine examination showed some dullness in the left base. Feb. 24. The dullness has extended rapidly, extending to fifth rib and with apex beat pushed toward the sternum. He was aspirated and oz. 30 of a distinctly purulent serum was removed. Feb. 26. Temperature 103°, pulse 120 and the patient quite emaciated. He was again aspirated and oz. 30 removed. The fluid is now distinctly pus. There was no apparent change in the dullness and in the afternoon a rapid resection of the seventh rib was done, in the posterior axillary line and 3 pints of pus were removed. Following this his condition, so far as pulse and temperature were concerned, remained good, but the general condition was very poor. March 2 rales could be heard over the opposite side and death resulted on the evening of March 3.

Case 4. G. W., 30. American, fireman. Admitted to hospital Sept. 7, 1907, with quite a severe attack of typhoid fever, temperature reaching 104°. Sept. 15, eight days after admission to hospital, he was given castor oil, oz. ½, at 7 a. m. and at 11:30 bowels moved with a stool containing some curds of milk. The patient complained of severe pains in the abdomen at the time of the bowel movement. Examination was made a few moments later. The patient was still having severe colicky pains. The breathing was full, costo-abdominal in type. The abdomen was not distended and the walls were not rigid. There was considerable tenderness on deep pressure to the right of the median line and on a level with the umbilicus. Abdominal tympany was normal and liver dullness was unchanged. At 1 p. m. he complained of pain in abdomen more diffuse and paroxysmal in character. The abdomen was more rigid, but not tympanitic. Liver dullness unchanged, temperature 101°, pulse 84. The pain persisted and at 3 o'clock temperature was 101.8°, pulse 92, of good tension and regular. Leucocyte count 17,890.

He was operated on at once. Incision into the abdominal cavity showed the bowels bathed in a greenish purulent fluid. They were intensely congested and somewhat distended. The appendix was very much inflamed and thickened and was quickly removed. A perforation was found in the ileun, about 18 inches from the colon, about ¼ inch in diameter and with a typical punched-out appearance. It was closed with a Lembert suture of linen, reinforced with a Cushing suture of the same material. The surrounding bowels were wiped with sponges moistened with normal salt solution and thorough drainage introduced.

For the first 24 hours the patient's condition was very serious, pulse very weak and at times almost imperceptible. After this there was a gradual improvement. The drainage at first was profuse and gradually lessened in amount. He was discharged as cured Nov. 29. He worked in the hospital several weeks, has been seen a number of times since and there has been no hernia develop in the wound.

Case 5. F. N., 22. American, fireman. Admitted to hospital Dec. 1, 1907. Gave a previous history of several attacks of gonorrhea and had been treated at the hospital a few months before for a mild attack of pyelitis. There was no evidence of tuberculosis of the urinary tract. He was first seen at his home. He was taken sick suddenly with headache, sore throat and pains throughout the body and complained particularly at this time of severe abdominal pain. Leucocyte count was 8,000. He was admitted to the hospital with a tentative diagnosis of typhoid fever, which was confirmed by the course of the disease. His temperature ranged 101° to 103°, pulse running from 86 to 100. The abdominal pain subsided after two days, but there was always a diffuse tenderness on pressure. The urine on admission gave a heavy deposit of albumin and many casts, mostly hyaline and epithelial.

Dec. 10, the tenth day after admission, during the forenoon the condition was good. Temperature at noon 99°, pulse 104. At 1 p. m. he complained of some pain in the abdomen, mostly in the left inguinal region. The pain was not of a sudden type, but gradually increased. The abdomen was soft, leucocyte count 9,380. At 6 p. m. the pain was diffuse, with tenderness in the lower part of the abdomen on both sides below the level of the umbilicus. The abdomen was slightly more rigid and the leucocyte count was still 9,000. At 8:30 p. m. the patient was suffering considerable pain; abdomen rigid, but not distended and diffuse tenderness present. Liver dullness was not obliterated. The leucocyte count at this time was 16,870.

He was operated on at once. The incision was made through the right rectus muscle. The bowels were very much congested, but not much distended, and were bathed in a greenish serum, which was distinctly purulent. A perforation was found in the ileum, about 6 inches from the colon, of oblong shape with well marked edges and of a cribriform type. It was closed, as was a second ulcer, with a very thin base, and in which there was an opening large enough to admit a small probe. The appendix was very much inflamed and was tied and removed. Owing to the profuse amount of sero-purulent fluid present the cavity was flushed with normal saline solution and extensive drainage was introduced. The patient grew steadily worse during the night and died at 6 o'clock the following morning.

Case 6. A. J. I., 30. American, engineer. Admitted to hospital Nov. 4. Gives a negative family and personal history, except for an attack of typhoid fever five years ago. During the fever he had an attack of pain in the upper right quadrant of the abdomen. Two or three months after convalescence he had a recurrence of the pain and tenderness in the gallbladder region, which lasted two or three months, gradually clearing up. Since then he has been, as he thought, dyspeptic, having heartburn, coming on about an hour after meals, but with no vomiting. Present trouble began four days before admission to hospital. He was taken suddenly with a severe cramping pain felt in the upper right side of the abdomen, radiating to the right shoulder, nausea but no vomiting, and heartburn. The pain was so severe that it required a hypodermic injection, probably of morphin. During the attack he was seen by the local surgeon, who transferred him to the hospital with a diagnosis of gallstone colic.

On admission the patient states that the pain had gradually subsided, but that the tenderness has persisted. On examination there is a distinct yellow tinge to the skin and sclera. Tongue is coated. Heart, lungs and urine negative, abdomen negative except for an extreme tenderness over the gallbladder area. A mass could be indistinctly felt at this place and was taken to be the gallbladder. A diagnosis of cholecystitis, with probable gallstones, was made. Temperature and pulse are normal.

Nov. 7 incision was made thorugh the right rectus muscle and an adherent mass was found. A careful dissection showed that the smaller curvature of the stomach, just above the pylorus, was adherent to the gallbladder and, on carefully freeing this, a perforating ulcer of the stomach, about $\frac{1}{4}$ inch in diameter was found. The base of the ulcer was formed by the gallbladder. This was carefully closed, so as not to lessen the lumen of the pylorus. The closure was done by means of a continuous suture of catgut through all the tissues of the stomach and this covered with a Cushing suture of linen. The gallbladder was very thick and inflamed, with rigid walls. The denuded surface was covered with peritoneum and it was then opened and drained. The patient made an uninterrupted recovery and was discharged Dec. 23. A letter received since says he has never felt better in his life.

Case 7. J. F. B., 23. American, car repairer. Admitted Oct. 1, 1907. Had a negative history. He was admitted with typhoid fever and ran an ordinary course. On Oct. 4, three days after admission, he complained of sudden severe pain over gallbladder area, not reflected and examination showed extreme tenderness at that place, the tenderness extending toward the umbilicus. Leucocyte count 8,000. Diagnosis of cholecystitis was made and an ice coil was applied. The pain and tenderness gradually subsided. Oct. 11 he had a similar attack with more pronounced symptoms. Leucocyte count 12,732. This attack gradually subsided. On Oct. 22 the temperature had been normal for seven days. There was still some tenderness on pressure over the area of the gallbladder and also a considerable tenderness over the appendix.

The intention was to wait till convalescence was well established before operating, but he had a third attack of pain and at all times considerable tenderness in the gallbladder area, so that further delay was decided against and he was operated on Nov. 8. The incision was made through the right rectus muscle and the appendix was first examined. It was badly inflamed and bound down to the colon by firm adhesions. An appendectomy was done. The ileum showed scars of healed typhoid ulcers. The gallbladder was then examined and found to be densely adherent to pyloric end of stomach, duodenum and to the liver. The adhesions were carefully freed and a perforation found in the cystic duct near the junction with the hepatic duct. A considerable quantity of pus was discharged; the finger could be passed into the abscessed gallbladder. There was no cystic or common duct obstruction and no stones could be found. A rubber drain was introduced and the gallbladder drained through the rupture.

The patient's condition was very critical for the first two days. The second day his pulse was running 140 and very weak. He had a great deal of pain in the upper part of the abdomen. On the third day he began to improve, and from that time the improvement was steady. His convalescence was slow, owing to his debilitated condition. He was discharged from the hospital Dec. 19, with the wound nicely healed and a firm scar.

Case 8. N. L., 33. Irish, fireman. Admitted to the hospital Dec. 30, 1907, with typhoid fever which ran an ordinary course, except that it was complicated by a phlebitis of right leg. From Feb. 1 to 12 he had no temperature and was convalescing nicely. Feb. 12 he was taken with a severe pain in the epigastrium, with extreme tenderness over gallbladder and pronounced rigidity of the muscles of the right side of the abdomen. There was no nausea and no vomiting. The condition the first day was very good; the highest temperature was 100°, pulse 110. Feb. 13 till 4 p. m. the condition remained very good, temperature 99°, pulse 90 to 100. There was still great tenderness over gallbladder. At 4 p. m. his temperature was 102°, pulse 132, leucocyte count 18,000. At 6 o'clock he had an attack of vomiting. At 8 temperature was 102.4°, pulse 140, leucocyte count 24,132.

The operating room was prepared and when the patient was taken to it, at 9 o'clock, his pulse was 160. The incision was made through the right rectus muscle and the gallbladder was exposed. It was intensely congested, walls quite rigid and no adhesions. On incising the gallbladder a thick pus, streaked with bile, was evacuated. Even with the removal of the contents the walls did not collapse, but remained rigid. They were about as thick and firm as a hollow rubber ball. Rubber drainage was introduced. At 4 o'clock the next morning the temperature was 99.2°, pulse 100. Convalescence was uninterrupted except for the persistence of the fistula into the gallbladder. He was discharged from the hospital May 20, 1908, with the fistula unclosed, to visit on a ranch where he would lead an outdoor life and was to return later if the opening persisted. I have heard nothing from him since.

In addition to these cases, I have had two or three others of cholecystitis complicating typhoid which I do not report. They were mild attacks, and when the patients were discharged there was no tenderness to be detected. Whether any later trouble may develop remains to be seen.

DISCUSSION.

A. C. Smith, Portland: The wide dissemination of the typhoid bacillus during and after the fever is generally conceded, and yet not all of us recognize the not infrequent complications involving pleura, meninges and viscera generally. My experience with perforation has been very limited, and I did not fully realize the value of surgical interference as indicated by Dr. Mower's classical array of cases. However, I think most of us are not unmindful of the duty of alertness for this complication and of the necessity for immediate operation when perforation occurs. The doctor's report proves the operation to be a great life saver in a class of cases that would be absolutely fatal if non-surgically treated. When the necessity for operation arises in cases treated at home, I do not think they should be removed to a hospital. They should be opened up immediately and with as little manipulation and as rapidly as possible. I am strongly inclined to the use of local anesthesia in these cases, or any others, of peritonitis with tympanits. It is difficult to get valuable statistics on perforation cases, as many occur and terminate fatally that are never recognized. Dr. Mowers did not report any cases of mastoiditis as a surgical complication, of which I had three. I wish to compliment the writer upon the excellence of his paper. It alone would justify us in being here.

Dr. Mowers, in closing: I quite agree with Dr. Smith as to the advisability of operating on these cases in the house. A typhoid fever case, that has been running a severe course and develops perforation and then peritonitis, I do not think should be taken to the hospital. I have been fortunate enough to have seen a good many typhoid cases other than those reported. These are the cases we have had since I have been in Tacoma; prior to that time I was in Brainerd, Minnesota. I have never seen a typhoid case which has been harmed by giving an anesthetic. A case that has been running a temperature of 102° to 104° will drop to normal. None is injured by the operation, so I think these cases, which are surgical, should be treated promptly.

SENILE CATARACT.*

By R. L. Nourse, M. D.,

BOISE, IDAHO.

The subject of cataract is by no means a modern one, as the condition was known to the physicians of ancient Greece and Rome, and from an erroneous conception of its nature was mis-called by them "cataract," on the supposition that it was an opaque fluid between iris and lens.

Most of the present-day views and theories concerning the etiology and pathology, as well as many of the established methods and technic of operative treatment, were worked out a number of years ago. And yet, while progress along these lines of medical knowledge in recent years has not been so sensational or spectacular as in some of the newer fields of medical research, ophthalmic surgeons have not been "marking time," but have made substantial progress in the matter of improvement of method, and in refinement of technic. I have thought, therefore, that it would not prove uninteresting or unprofitable, to occupy your attention for a few moments with a brief resume of the present status of opinion and practice regarding this, to the unfortunate victim, at least, most important subject.

HISTOLOGY.

Histologically the lens is an elastic, crystalline body, composed of long, prysmatic, sexagonal transparent fibres, held in close apposition by a strong cement substance. Being formed in the embryo by an infolding of the ectoderm, the lens is genetically speaking an epithelial structure. It is contained within a transparent, elastic, fibrous capsule, and is suspended within the eye, immediately behind the iris. It contains neither nerves nor blood vessels, and obtains its nourishment by absorption from the fluid secreted by the ciliary processes. Inflammation, or phakitis is, therefore, an impossibility.

The process of tissue metabolism in the lens is exceedingly slow. This is shown by and accounts for the usually slow development of opacities, which require from one to four years for their maturity. They may be and are, at times, arrested for a shorter or longer period, owing to some unknown alterative, or nutritional changes in the general system.

Anatomically the lens is composed of a nucleus, and a cortical substance. Histologically they are identical, excepting that the nucleus is harder and more compact. The nucleus corresponds in size to the age of the individual, being practically indistinguishable before the 25th year.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

This increased density of the central portion of the lens is a physiologic process, a sclerosis, which, beginning in early life, is continuous and progressive throughout life. In extreme old age the nucleus constitutes, practically, the whole lens. This fact has a very important bearing upon the operation for extraction, as it necessitates a modification of the technic according to the age of the patient.

The cortical portion of the lens is entirely colorless, while the nucleus, colorless in early life, gradually assumes a slightly yellowish, or brownish tinge which deepens slowly as age advances. The larger and harder the nucleus and the deeper the tint, the more rays of light does the lens reflect, and the less it refracts. This accounts for the pupil in old age being no longer a pure black as in youth, but appears greyish, or a greyish green. This reflex may be mistaken for cataract by the inexperienced observer.

PATHOLOGY.

According to Becker and Parsons, the changes which take place in the lens as a result of development of cataract are both physiologic and degenerative. That is, as the nucleus hardens it shrinks and, if this shrinkage proceed with undue rapidity, the cortical layers of fibres fail to adjust themselves accurately to the diminishing nucleus, and there results interfibrillar spaces or vacuoles, which are filled with a fluid or droplets, the globules of Morgagni.

According to the researches of Trufesco, there occurs a fatty degeneration of the crystalline fibres, they swell, becom irregular, and later disintegrate into fibrillae, which are finally absorbed, leaving a homogeneous mass interspersed with vacuoles. With the completion of the process of disintegration of the cortical substance, the attachment between it and the capsule is loosened and this is that which facilitates the shelling out of the lens when a mature cataract is extracted.

CLASSIFICATION.

With reference to anatomic location, we designate a cataract as, (a) cortical, (b) nuclear, (c) capsular, (d) general.

With regard to the stage of maturity we speak of a cataract as, (a) incipient, (b) intumescent, (c) mature, and (d) hypermature, or Morgagnian cataract.

We also designate an opacity of the lens as, (a) primary, (b) secondary, (*i. e.,* as a result of other eye diseases), and (c) symptomatic, (*i. e.,* of some constitutional disorder).

According to its consistency, color, etc., we speak of cataract as hard, soft, white, black, amber, etc.

These terms are sufficiently descriptive, and require no further elucidation at this time.

ETIOLOGY.

The long and patient search for a specific cause for cataract has thus far proven unsuccessful. Nor is it likely that a single definite cause will ever be found. Among the most common contributing causes should be mentioned:

Age. While advanced age is by far the most important factor in the etiology of cataract, senility alone is not a sufficient explanation, since, as Fuchs states, opacity of the lens is not a physiologic attribute of old age. It is not a physiologic but rather a pathologic change. According to DeSchweinitz, age is simply a predisposing cause. While it rarely develops before the 50th year of life, it has been reported as early as the 40th, and earlier. According to one observer the very beginnings of cataract appear between the ages of 20 and 30, as an equatorial opacity.

Heredity. Some remarkable examples of the influences of heredity in the causation of cataract have been reported. Dr. Casey Wood reports that, in one family of four generations, numbering 31 persons, he found eleven cases of pre-senile cataract. In another family of five generations and 25 people, he found twelve cases of juvenile cataract; and in another family with four generations and nineteen people, six had cataract.

Sex appears to have no particular influence, as both sexes are about equally affected.

Constitutional Diseases. The most frequent of systemic diseases causing opacity of the lens is diabetes. The higher the percentage of sugar found in the urine, the more danger there is of the lens becoming involved. DeSchweinitz states that sugar has been found in 1 per cent. of cases of cataract. An examination of the urine should always, therefore, precede an operation for extraction, since the prognosis is materially affected by its presence.

Cataract is sometimes found associated with rheumatism, gout, malaria, syphilis, rachitis, arteriosclerosis, and nephritis. Albumin, in fact, has been found in about six per cent of cases. And yet, as Becker says, "no definite connecting link between constitutional diseases and opacities of the lens has been established."

According to Grilli, cataract is due to a dehydration of the lens brought about by insufficient elimination of solids by the kidneys, and a resulting rise of somotic tension in the blood and aqueous humor. The fact that a large majority of cases occur among the poor and those living midst unhygienic environs would seem to indicate that improper nutrition is also a predisposing cause.

Other Eye Diseases. Cataract may occur as direct result of some other acute or chronic diseases of the eye. It is most apt to follow such diseases as iritis, iridio-cyclitis, chorioiditis, retinitis-pigmentosa, glaucoma, and detachments of the retina. This, strictly speaking, is not true senile cataract, though it is much more apt to occur in advanced life.

Refractive Errors. Rrefractive errors have been charged by enthusiasts as responsible for every disease in the catalogue, even appendicitis. No wonder, then, that it is included in the causes of cataract. Investigations have shown that a very large majority of cataractous eyes, were those that suffered from some form of unrelieved refractive error. Hyperopia and astigmatism are the forms that have been most frequently found in connection with opacity of the lens. The tendency to cataract appears to be greater when the astigmatism is against the rule and remains uncorrected. In most cases no single cause but rather a combination of causes must be invoked to account for the condition.

SYMPTOMS AND DIAGNOSIS.

The diagnosis of cataract does not ordinarily present any particular difficulties. The one principal symptom complained of by patients, and often the only one, is gradually failing vision.

Hyperemia, pain and photobia may occasionally be present. The pain, when present, is generally due to the increased tension of the eye from swelling of the lens. Diplopia and polyopia are sometimes complained of, due, doubtless, to the irregular astigmatism caused by the alterations in the lens surface.

In the early stages the anterior chamber becomes shallow from the intumesence of the lens, returning to normal depth at maturity, and deeper than normal when the cataract has proceeded on the stage of hypermaturity.

The color of the pupil varies according to the degree of maturity. Back in the incipient stage, it gradually becomes more and more noticeably grey, as the opacity advances. The catopric test, by means of a lighted candle held before the eye, has lost much of its value since the advent of the ophthalmoscope. It is by means of the latter instrument that the slightest opacity in the lens becomes plainly visible, the opaque areas appearing as dark areas or spots against the red background of the retina.

Oblique illumination is also of value in diagnosing the presence of a cataract by the reflection of the rays from the hard, pearly surface of the lens. It is chiefly of value, however, in determining the stage of ripeness. If in the incipient stage, a broad, crescentic shadow of the iris is thrown upon the lens when the source of light is carried to one side. The width of this shadow gradually decreases as the cataract progresses until, at maturity, a shadow is no longer cast by the iris, since the opacity has now reached the anterior capsule.

The use of a midriatic is invaluable in diagnosing the presence of cataract, as well as determining the stage of maturity.

Before advising an operation for extraction, the presence or not of other eye diseases should always be determined, so far as it is possible. This may be done by examining the mobility of the pupil under effects of light and midriatics, by ascertaining the condition of light perception, by having the patient point to the position of a lighted candle as it is moved about, while he keeps his eyes looking straight ahead. When the patient is no longer able to count fingers at three feet, is a sign of maturity which is adopted by many surgeons.

TREATMENT.

The treatment for cataract is exclusively surgical. Fuchs says, "no medicinal treatment of any kind is effective against cataract." DeSchweinitz emphasizes this opinion when he says, "drugs do not exist which can dissolve a growing cataract." The same author further adds, "electricity and massage are likewise useless." These statements from two leading European and American authorities may be taken as a consensus of opinion prevailing among ophthalmic surgeons everywhere.

Some few writers, among them Duane, of New York, seem to think it possible to cause absorption of incipient cataract by strict regulation of the diet, and the correction of any existing constitutional disorder. But this view is neither numerously held, nor vigorously defended.

Four principal methods of operating for cataract may be mentioned, but it is not my purpose to delineate any of them in detail, but simply and briefly to indicate the principal points and indications for each.

Discission. By this method the lens capsule is opened by a knife-needle, the fibres of the lens slightly broken up, and left exposed to the action of the aqueous, with absorption as the ultimate aim and expectation. This method is generally applicable only in the earlier years of life and in congenital, juvenile and some cases of traumatic cataract.

Suction. This is accomplished by means of a hollow needle introduced through the cornea, into the substance of the lens, and having attached to it a rubber tube by means of which the operator sucks out the lens matter with his mouth, applied to the other end of the tube, or an aspirating apparatus. This method is suitable only for very soft or fluid cataracts which have completely undergone disintegration and liquefaction. It is but rarely employed.

Depression. By this method the opaque lens is dislocated and displaced downward into the vitreous by means of a suitable paracentesis needle. This was the only operation for cataract known to the ancient Greek and Roman surgeons. Nor were they aware that it was a lens which they thus displaced. Believing, as they did, that the lens was the perceptive organ of sight, they supposed that they were merely pushing aside a veil of opaque matter from in front of the lens.

This operation is sometimes the only one possible or practicable in some cases of congenitally dislocated lens, or where it is accidentally dislocated during an operation for extraction. It has also sometimes been resorted to in cases of detached retina where a further detachment is to be feared, and in operating upon the second eye, where the first was lost from propulsive hemorrhage in "bleeders."

Extraction. This is the operation employed in the vast majority of all cases of cataract. There are several modifications, known as, (a) simple extraction, (*i. e.,* without iridectomy); (b) combined operation, (*i. e.,* extraction with iridectomy at the same time); (c) extraction, preceded by a preliminary iridectomy; (d) extraction of the lens within its capsule, (or the so-called Indian method) so brilliantly performed and advocated by Major Smith. Operators are by no means agreed as to the relative merits and demerits of the above-named methods and modifications. Many excellent surgeons prefer the simple extraction and advance reasons which to them seem amply sufficient. Others, and I may add by far the larger number of both European and American surgeons, prefer the combined method of extraction with iridectomy. And a majority of these practise the iridectomy at the time of the extraction. Only a few operators have as yet the temerity to attempt the removal of the lens within its capsule.

There is also a want of unanimity with reference to the question, "when should we operate upon the primarily affected eye with reference to the stage of maturity, and to the condition of vision in the fellow eye," many writers holding to the older practice that an extraction should never be performed until the cataract is "ripe."

Fox, of Philadelphia, says, "it should always be known with certainty that a cataract is ripe before an operation is performed," adding that, "if an unripe cataract is removed a portion of the lens is invariably left behind which later becomes opaque, and requiring a second operation." As a choice between performing any of the operations for artificially ripening cataracts, however, this author would prefer to extract before maturity.

Lauber, in Schnabel's clinic, does not hesitate to extract an immature cataract. He advises extraction just as soon as the patient's vision has become so impaired as to make it difficult for him to get about and to perform his usual duties. He states that the tendency of the practice in Vienna at present is to pay more consideration to the comfort of the patient than to the stage of maturity of the cataract in determining the time for operation.

Fuchs operates upon mature cataracts as soon as incipient opacity makes its appearance in the other eye, and also in cases where the fellow eye is entirely sound, urging that the larger field of vision thus obtained, and the benefit of having a good eye in reserve, in case of the other becoming impaired, is sufficient justification for the operation, even though the operated eye becomes highly hyperopic as a result of the extraction of its lens, and satisfactory binocular vision is scarcely to be expected, even with correcting lens.

Wishing to learn the views and practice of American oculists concerning these several mooted points, I addressed letters of inquiry to some twenty of the leading ophthalmic surgeons in this country, as follows:

1. When do you advise operating upon the primarily affected eye, that is, (a) when mature only, and why, or, (b) when vision begins to fail in other eye, with or without reference to degree of maturity?

2. Do you always perform iridectomy, and if so, do you prefer (a) preliminary iridectomy, and why? or, (b) iridectomy at time of operation, and why.

Owing to the limited time, and the absence on summer vacations of most of the doctors, only seven replies were received. These I will read.

Dr. W. Franklin Coleman writes, "In cataract I operate on one eye without reference to the other, when vision is reduced to counting fingers at three feet; and in all cases performing a preliminary iridectomy."

Reasons:—"The reports of Moorfields show that the operators select the most favorable cases for the simple operation, and the combined operation, and the complicated cases for preliminary iridectomy, and the visual results in the last operation are as good as in the first two."

2d. "Operators admit they do a preliminary iridectomy when the fellow eye is lost."

3d. "Preliminary operation in three-fourths of cases hastens the maturing of the cataract."

4th. "The hemorrhage of an iridectomy, which occurs in 50 per cent. of cases is absorbed soon and leaves a clear field for the second operation."

5th. "There is scarcely ever a prolapse of iris, as in simple operation."

6th. "Much is learned regarding the conduct of the patient under operation."

7th. "An operation for secondary cataract is seldom required."

8th. "The amount of trauma, as compared with the combined operation, is divided, and therefore healing is more certain."

9th. "The simple operation is the least safe for the average operator, and it is being abandoned, as literature shows."

Dr. F. C. Holtz says, "I advise operation on cataract of one eye, mature or nearly mature, if the other eye shows signs of cataract, and vision is so impaired as to make reading impossible. I always perform iridectomy because I consider the combined operation safest and affording better facilities for clearing the pupil of cataractous shreds." He does not do preliminary iridectomy.

Dr. H. Gifford says, "I do not operate upon the first eye as long as the other retains useful vision, unless it be mature; but whenever sight in best eye gets beyond the point above indicated I operate on the affected one, sometimes doing a preparatory discission, and sometimes without. If the cataract in the first eye gets mature with the vision in the other eye quite good, and the cataract in it is apparently stationary, I allow the patient to decide whether to have the slightly better chance afforded by operating when the cataract is just about mature, or whether he prefers to take the slightly increased risk of operating upon a hypermature cataract. As a routine measure I do the combined operation, because I have had so large a percentage of prolapses in my simple operations that I have practically given up this method. For a time I was an ardent advocate of the preliminary iridectomy, but have reached the conclusion that there is enough extra risk involved in the iridectomy itself to more than counterbalance the advantages of a divided operation."

Dr. David Webster writes, "I operate upon the primarily affected eye when the cataract is ripe, provided the patient wishes it, after a full explanation and understanding of all the facts, unless there are counter-indications.

2d. "I sometimes operate upon an immature cataract, in cases in which the sight is so much impaired as to greatly interfere with the patient's usefulness and happiness.

3d. "I do simple extraction in comparatively young persons where the tissues retain their elasticity.

4th. "In aged persons with sclerosed and atrophied tissues, I generally do an iridectomy at the time of the cataract extraction.

5th. "I do a preliminary iridectomy several weeks in advance, in cases in which the patient has only one eye."

Dr. G. C. Savage writes, "It is always more desirable to operate on the mature cataract than on one immature. Nevertheless, I make it a rule to operate on the worst eye as soon as I find that the vision of the better eye has been reduced to such an extent as to make it unsafe to get about by himself.

2d. "I always do an iridectomy, but never a preliminary one. I believe that the iridectomy and the extraction should be done through the one corneal incision. The only objection I can see to this plan is that sometimes the iris bleeds and the field is somewhat obscured. The blood from the preliminary iridectomy would, of course, be absorbed before the later extraction. I always advise my patients not to have the second eye operated upon, if I obtain good results in the first eye."

Dr. Francis Valk replies he operates when vision begins to fail in other eye, without reference to maturity, as, for economic reasons it is necessary to improve the binocular field, as in artisans, etc., when vision is reduced in best eye so as to interfere with work. In others, according to their ability to get about, and he operates at any time, if necessity demands it. He seldom, if ever, does a preliminary iridectomy, as he does not consider it necessary. Nor does he do an iridectomy at time of operation, unless the iris shows a tendency to prolapse. His aim and object is *always* to do a simple extraction according to his article in *Ophthalmic Record,* August, 1908.

Dr. Charles Oliver writes, "I operate upon either eye when cataract is mature, only, as being the proper method for the greatest good to the patient." He adds, "the secondarily affected eye may mature its cataract first."

He operates on immature cataract only in some compulsory cases, which are rare. He never does a preliminary iridectomy if possible, as it makes two operations, the second, the important one, not being well borne, such an iridectomy being indicated only in cases complicated by iris disturbances, capsular changes, etc.

He also does not do an iridectomy at time of operation, except in complicated cases above mentioned, or, unless the simple operation, for which he strives, becomes complicated during the procedure. "Simple extraction, with a conjunctival flap, upon a fully-matured cataract, in which there is but one procedure, the least mutilation, and the least chance for infection, is my preference."

It will thus be seen that there is considerable diversity of opinion as to the particular method of operating, but not so much, in this country at least, as to when to operate. From his observation of eye work at Vienna, and at Moorfields, and from his own limited personal experience, the writer is inclined to agree with those who advise operating only when the cataract is mature or very nearly so, and also with those who advocate the combined operation, with iridectomy at the time of the extraction.

Nearly all patients dread an operation, no matter how trivial or simple it may be from the surgeon's standpoint, and the second operation is usually more dreaded and has a more depressing effect upon the nerves and spirits of these patients than the first. Furthermore, the second confinement in the hospital and darkened room also has a doubly depressing effect upon elderly people, and should be avoided if possible.

LYMPHOID TISSUE.*

By F. J. Van Kirk, M. D.

BELLINGHAM, WASH.

Some four years ago I had the pleasure of reading a paper before this society upon lymphoid tissue. I wish to supplement that paper by a few remarks upon the same subject tonight. A great deal has been said and written concerning lymphoid tissue in the past few years, but our investigation has just commenced. I will only occupy a few moments of your time in pointing out the location of a few constant, and well marked patches of lymphoid tissue along the alimentary tract, and at the same time call your attention to well-known afflictions which attack them.

If we draw down the lower eye-lid and look into the outer angle of the cul-de-sac, we will see there arranged in rows, little elevations of lymphoid follicles, the involvement of which constitutes one of our most common eye afflictions, acute follicular conjunctivitis. A more severe involvement, possibly an infection, produces granular conjunctivitis, and a still more severe form is known as trachoma, the most dreaded eye disease known . These are all afflictions of the lymphoid tissue of the eye.

As we pass through the nasal duct into the nose and from there into the rhino-pharynx, we enter the alimentary tract proper and I here wish to call your attention to a very important fact. In early embryonic life we find the mesoderm folding in to form the digestive tract and its appendages, and at this time it comprises a layer which is a continuous sheath of lymphoid tissue, and from this tube, but a few mm. in length, the entire intestinal canal is developed.

The esophagus springs from one portion, the rectum from another; a portion of the tube dilates into the stomach, while another goes to form the appendix. This embryonic canal, which at birth is thirty feet in length, contains lymphoid tissue, not in the original continuous sheath, but in patches more or less scattered along the entire tract. It seems to have been absorbed entirely in certain places and accumulated in others in such quantities as to be considered lymphatic glands, and we now know that these tufts are constant in their location, relative size and age of appearance.

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*Read before he Whatcom County Medical Society, Bellingham, Wash., Jan. 11, 1909.

A most peculiar formation of lymphoid tissue is found in the oro-rhino-pharynx. Between the pillars of the fauces, on either side of the oral cavity, we have the two large accumulations known as the faucial tonsils. Above and in the vault of the pharynx is located the pharyngeal or Luschka's tonsil, which becomes an adenoid when enlarged; and below, at the base of the tongue, there appears about middle life a fourth or lingual tonsil. These collections of lymphoid tissue are all connected together by lateral bands, forming a complete circle known as Waldeyer's ring.

Some idea of the importance of this group of tissue may be had by investigating its relation to disease, for it will be found to be the direct etiologic factor in most diseases of the rhino-pharynx and middle ear. It is responsible for most cases of deaf mutism, dullness and stupidity among school children, as well as chronic catarrhs and inflammations of the tympanum. It was part of Waldeyer's ring, referring to which Dr. Emmet Holt says: "It is certainly the source of more discomfort, and the origin of more minor ailments, than any other pathologic condition of childhood."

The larynx contains follicles of lymphoid tissue which are liberally distributed in the mucosa of the bronchi, where they are actively involved in inflammations of these structures. They are found in the esophagus, as well as the stomach, and especially is this true of the pyloric end, where they constitute what is known as the lenticular glands.

The intestinal tract is profusely studded with lymphoid tissue which entirely surrounds each and every villus as well as the crypts of Lieberkühn. This tissue is found in the form of solitary glands or isolated lymph follicles, and agminated glands or Peyer's patches. At the vermiform appendix these lymph follicles form a continuous zone and completely encircle the orifice of that organ. The rectum contains lymphoid tissue arranged in and around the folds of Houston and near the sphincter.

Lymphoid tissue makes its appearance in different portions of the human body at different periods of life. It develops, reaches a climax, and enters upon a stage of retrogression; and this peculiarity seems to be more characteristic of certain portions than others. The part of the tract where this tissue earliest reaches its development is probably the lower canal, for we find at birth the lymphoid tissue of the rectum well developed, and many of the so-called prolapses of this region are really protrusions of the tonsil of the rectum. The follicles surrounding the appendix are very rudimentary at birth and commence to grow rapidly only after the sixth week, from which we must infer that inflammations, at least of this tissue, must be rare at this period of life.

The characteristics of the lymphoid tissue of Waldeyer's ring are most perfectly known on account of its favorable position for observation. Very little is found in the pharynx at birth, but it begins to appear before the period of lactation is over and we expect to find it well developed at about the second year. It increases and seems to be an active functionating part of the anatomy up to the age of puberty, when it conctracts and in old age disappears. Hypertrophies and inflammations of the faucial and pharyngeal tonsils are practically confined to these periods. The lingual tonsil, however, possesses a different life history. It is an organ of adolescence or adulthood and is most common between the ages of thirty and fifty.

The characteristics of the tissue in other parts of the human body are very imperfectly known, except that it appears to be a tissue in some way connected with childhood and the formative periods of life. It is entirely absent in the urethra, bladder, and urinal tract.

I have attempted in these few remarks to call your attention to these facts: that lymphoid tissue is an embryonic structure; that nature has seen fit to place it profusely throughout the entire respiratory and alimentary tract; that it is accumulated in masses which are constant and relative in size; that it posesses a life cycle, and passes through a definite stage of development and retrogression; that it appears at different periods of life in various parts of the body; that it is characteristically a tissue of early life, and that it is absent in the urinal tract.

The question now arises, what is its physiology, and what is its function. Its location seems to be significant, for we find it collected at the very orifices of respiration and alimentation, as if it were to guard against the ingestion of injurious substances; and this peculiarity of location is also characteristic of the tissue at the pylorus, around the villi and crypts of Lieberkühn, as well as at the orifice of the appendix.

Lymphoid tissue has long been supposed to have a phagocytic action, possibly on account of its similarity to the lymphatic glands of the body which contains corpuscles known to possess this function, but it has not been proven and is probably not the case. It certainly secretes a fluid and this may be a germicide or a neutralizer of ptomains. Its appearance at a certain formative period of life may be explained by the supposition that it is concerned in the processes of metabolism and development and, like the thymus gland, it atrophies and disappears when its period of usefulness is over or some other portion of the body assumes its function. Its secretions may be intimately associated with the neutralizing alexins of the blood or, finally, it may be the involuted remains of a once useful organ which possibly mitigated the effects of some injurious condition in a remote period of the life history of the human race. Its function has certainly not been well established up to the present day.

But, however little may be known of the physiology of lymphoid tissue, it is certainly known that it is subject to disease and decay, that it is the portal of infection of many systemic diseases and that it possesses probably the least vital resistance of any tissue in the human body. How many physicians are there present who are not called upon daily to administer to ailments due directly to the vulnerability of these lymphoid structures? Practically all of the acute exanthemata, the coryzas, and recurrent congestions of the nasopharynx and respiratory tract are all lymphoid diseases; and the same may probably be said of gastritis, gastro-enteritis, and the various inflammations of the intestinal tract. And with certainty may I state, possibly with few exceptions, that all cases of appendicitis are analogous and identical with the inflammations of other accumulations of lymphoid tissue, and there is no reason why we should not refer to appendicitis as an acute follicular tonsilitis or a quinsy of the tonsil of the appendix.

This brings me to the observations of Max Myer who has proven by autopsies that inflammations of the faucial tonsils were accompanied by a congestion of the lymphoid tissue of the intestinal tract, and that tonsilitis was more than a local disease. This information explains the efficacy of calomel in commencing tonsilar inflammations.

In consideration of these statements, which I believe to be facts, is it not true that the study of lymphoid tissue is a very important one, and is it not strange that many of our text books fail even to mention it? Instead of our government spending thousands of dollars annually investigating the cure of tuberculosis, would it not be more rational and would they not be striking nearer the fountain head of the etiology, not only of tuberculosis, but of many other infectious diseases, by stimulating investigation of the lymphoid tissue of the respiratory and alimentary tract?

THE RELATION OF THE PATHOLOGIST TO THE CLINICIAN.*

By W. S. Griswold, A. B., M. D.
SEATTLE, WASH.

Medicine has advanced so that it is impossible for one individual to have a fair knowledge of all its branches and practise them with even moderate success, to say nothing of aiding in the advancement of the science. More or less specialization is essential and one of the problems of the day is to adjust matters so that all may have a fair chance. Medical men do not heed the lesson of specialization of the cells of the body, where each class has its function and also a due respect for the work of cells of every other class.

Each specialist is likely to think his own specialty the most important, but they seem agreed upon considering the pathologist the least among them all. His field is yearly becoming wider and of more importance, yet he is given but little opportunity. Calling a pathologist in consultation is extremely rare and would be thought by many about equivalent to asking in the undertaker to give suggestions to the family physician. Even in hospitals having a pathologist upon the staff, his proper place is considered to be the laboratory and not at any time in the ward, unless it be to draw blood for an enumeration of corpuscles. He is everywhere excluded from gaining practical knowledge and then his work is criticized as impractical. His reports are taken by the practitioner and used in determining a diagnosis without his being present to interpret the results of his work and give them due importance in the case. He seems everywhere to be considered the agent, never the peer of the practitioner.

The result of this is that most of the advancement in practical pathology must be made, not by those who are primarily pathologists, but must be left to the men who are primarily practitioners and then pathologists.

Animal experimentation is the only field the pure pathologist may freely cultivate. He must study gross pathology when the clinician sees fit to send him the specimen and then often after it has undergone the changes produced by time and much handling. He rarely sees the specimen he afterward studies, while it is part of the living body. He has little chance of knowing the associated changes, except as they occur in the dead body and his knowledge of the symptoms produced and the physical findings must be obtained second hand. Indeed, these things are considered none of his business, yet how much more valuable his opinion would become if they were always made a part of his business.

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*Read before the Physicians' Club, Seattle, Wash., Jan. 12, 1909.

The clinician considers that a certain pathologic procedure would aid in the diagnosis and at once orders it. Often it gives no results of value and in the nature of things could not, yet the science of pathology is blamed for the result. The pathologist is never asked what measures would be of value; that is ordinarily considered no part of his function. Yet how much time and how many disappointments would be saved, if a competent pathologist were consulted as to what measures to take, and how much broader he would become if such opportunities were given him. At present he can study only such problems as the clinician sees fit to allow him to investigate. He is entirely out of touch with the patient. He has no way of accurately and intimately knowing the relation of what he sees under his microscope or in his test tube to what is going on in the body of the patient and he can never fulfill his function to the best advantage to all concerned until he does have that opportunity.

Specimens of tumors are frequently sent to a pathologist that are of no value because of faulty technic in securing them. The clinician in his student days studied specimens that were put before him because they were typical, in fact they were picked from among many because of that fact and he does not realize that where a laboratory diagnosis is of most value much care must be taken to secure the specimen in a proper manner, or such a result is impossible. Frequently necrotic areas are sent to the laboratory, from which, of course, no diagnosis can be made, or a small piece of tissue is sectioned parallel with the mucous membrane with negative results. Whereas, if it had been cut perpendicularly a diagnosis might have been made, and all because there is nothing about the specimen to show its relation to the organ from which it came. At times the diagnosis may depend upon securing a piece of tissue showing the junction of the normal with the abnormal, yet the pathologist is seldom consulted about this.

In other cases the history is omitted where it may be essential; no information is given as to what part of the body the specimen came from, the clinician not realizing that a slightly abnormal lymph gland may have the appearance of a round cell sarcoma or that inflammatory tissue may be difficult to tell from a malignant growth. Specimens sent from a distance are often improperly preserved. Sometimes 50 per cent. alcohol is used, which is never strong enough and, even when stronger alcohol is used but in insufficient amount in proportion to the size of the specimen, it abstracts sufficient water from the tissue to reduce the percentage to 33, when it acts as a macerating fluid, and makes the tissue useless for diagnostic purposes. It does not seem generally known that a 10 per cent. solution of formalin is the safest fixative for specimens that must be transported any distance, although specimens of sputum that rarely need any preservative are sometimes made nearly useless by this treatment.

If the products of a curettage are not at once put in water or normal saline so as to wash the blood off the fragments of mucous membrane, the pathologist is likely to get little membrane and much fibrin and his work, of course, amounts to little or nothing.

Malignant tumors are by no means always typical; the points of malignancy may not be clear enough to determine absolutely the nature of the tumor; indeed, one part of a tumor may be carcinomatous and another sarcomatous. Inflammations and degenerations may closely resemble malignancy, and there is no doubt that many malignant cases are reported cured because of mistakes in diagnosis.

Much of the pathology is done by men just out of school, yet they are no better fitted for this work, as a rule, than they are for major surgery. Few hospitals have proper laboratory facilities. Those owned and controlled by physicians are probably the greatest offenders in this matter. This shows the attitude in one city does not differ essentially from that in others.

Internes are compelled to work out their own salvation in the laboratory with poor equipment and little time at their disposal, and have no one to call upon when they are perplexed, not even good books to follow as guides, unless they procure them for themselves. If an interne learns any pathology while in the hospital, he certainly does not owe it to the institution, yet the opportunity to acquire such knowledge is usually held out as one of the inducements to take a hospital position. To make matters worse, he is often compelled to make many examinations that can produce no results for him or any one concerned, when, if the work were done under the direction of a competent pathologist, much useless labor could be eliminated; yet many examinations could be made where such are essential for a proper diagnosis. He could also learn to save time by improvements in technic. If the hospital were considering putting a pathologist upon the staff, he would probably be expected to serve without pay, even in cases where his work was as essential as that of the clinician and when the clinician received full compensation for his efforts.

Many times after the most careful work, when all known measures have been used to determine the nature of the pathologic condition, it must still remain doubtful. This often brings laboratory work into disrepute. Complaints are not infrequent in the literature and some of the best known clicians are guilty of them, yet their own work is not successful in a larger percentage of cases. *They forget too often that the work done in the laboratory is only one element in the diagnosis, and should be given just its proper value in its relation to facts ascertained by other measures, and that here the opinion of the pathologist, if he is properly trained, may be invaluable.*

If the pathologist could be put in closer touch with the living patient and his advice accepted by the clinician as to what steps to take to aid in a laboratory diagnosis, his work would be of much greater value to both physician and patient. If he could get an idea at first hand of the history, symptoms, and physical findings, his work at the post mortem table would not only be more interesting, but would aid much in the advancement of diagnosis and therapy, as well as in that of pathology.

The training of specialists in pathology and the training of every practitioner in this subject should be more complete, and if we are to get the benefits of this science in the advancement of medicine as a whole, we must have pathologists in close touch with the clinician, and to do this opportunities must be made for him to secure remuneration for his services. If pathologists were given a place as consultants, there would be found many men of ability throughout the country willing to take up the work, whereas today the habitat of the specialist of this kind is the large cities that support medical schools, for with a few exceptions it is the only place where he can secure even a moderate income.

One of the results of the attitude of the profession toward pathologic work is the laboratories that advertise to do work at ridiculously small prices. The *Journal of the A. M. A.* carries an advertisement of a laboratory which claims that all examinations are made by physicians with the following prices in their fee table: Urinalysis, chemical and microscopic, $1.50; smears and sputum, $1.00; Widal, $1.00; complete blood count, $3.00; tissues, $5.00.

One might do well examining sputum for men who do not suspect tuberculosis until the disease has advanced to a stage that makes searching for bacilli unnecessary, because in a smear they will be so thick on the slide that every field will contain them; but if doing work for competent practitioners, this fee would mean starvation. Five dollars for sections of tissue will barely pay for the routine work and leaves nothing for remuneration for the years spent in preparation, nor would it enable a man to provide for maintaining his efficiency to say nothing of advancement. It would be about equivalent to a fee of $25.00 for a laparatomy.

NORTHWEST MEDICINE

THE JOURNAL
of the
WASHINGTON STATE MEDICAL ASSOCIATION.
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Published Monthly by the Washington Medical Library Association.

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Editorial and Business Office - Marion Building, Seattle, Wash.

Subscription Price, $2.50 per annum in advance. Single Copies, 25 Cents.
Foreign Countries, $3.00 per annum.

Entered March 14, 1903, at Seattle, Wash., as Second Class Matter, under
Act of Congress of March 3, 1879.

VOL. VII. APRIL, 1909. NO. 4

ASSOCIATION MEETING OF THE PACIFIC NORTHWEST AT SEATTLE IN JULY.

The program from members of the four associations is progressing toward completion so that it can be announced as a preliminary program in a short time. All who attend will be assured of papers that will be of interest and value. In addition to the distinguished internist and surgeon who will be present from the East, a well known genito-urinary specialist of New York is expected to present a paper. The section on ophthalmology is being prepared with care and papers will be presented by the well-known specialists from the four associations. The entertainment committee is preparing features that will be attractive and that will add to the pleasure of the large number of visiors who are expected to be present.

THE DIAGNOSIS OF SYPHILIS.

The existence of syphilis in our community in a large number of the inhabitants, even though apparently healthy, is a fact that is not disputed by physicians, but the appalling percentage per populum is recognised by but few. While the saying of Fournier, "Syphilibus omnia sunt," is certainly not borne out by experience, yet in some cities, as in Berlin, 60 per cent. of young men are said to be syphilitic. While the proportion is certainly not so great in America, yet in some localities, as where the population is new and composed largely of young individuals, it is met with in a somewhat larger proportion than in older communities. This being the case, and the diagnosis of syphilis in the individual being generally made upon the clinical symptoms and history, what may we expect of a form of diagnosis that is both positive and objective, that not only proves the existence of lues in clinically manifested cases, but also clears up the doubtful ones, proves that a cure has been obtained and positively disproves the existence of the disease in those who are not afflicted.

The protean and imitative manifestations of syphilis, simulating as they do various other more benign or malign diseases or lesions, the denial or ignorance of the patient as to exposure or luetic history, even though we agree with the Bard in that they "doth protest too much," render a clinical diagnosis difficult. Yet in face of these facts many a practitioner of medicine arrogates to himself sufficient knowledge to make a diagnosis from the classical lesions and a more or less imperfect history. Modern laboratory methods have been evolved by which even a medical man poorly equipped with appliances may now get more light upon the diagnosis, thereby convincing those who need treatment of the necessity for several years of unremitting attention and giving them assurance of a practical cure in the end; also relieving the conscience of the syphilophobe and the improperly diagnosed or condemned individual, as well as the assurance of safety to be given prospective marital relations, selection of children for adoption and in the choice of a wet nurse.

The finding of the trypsonema or spirocheta pallida in syphilitic lesions and blood by Hoffman and Schaunde, in 1905, and the substantiation of their claims as to this spirillum being the syphilitic germ by many observers since, has given us a positive diagnostic method that can be appled by all physicians. This trypsonome can be stained in a few moments and demonstrated by the microscope. The living and rapidly moving vibrio can be easily shown by the use of the dark stage, an attachment to the microscope brought out by Rev. J. B. Read, in 1837, but not much in vogue until the last few years, and this, too, can be used by any medical man. The spirocheta may be obtained from serum of scrapings of the genital, oral or other mucous membrane lesion or from the blood, in abundance from the former, but only after examination of a number of slides from the latter. Far more positive is the serum test of Wasserman, which can only be followed out in a well equipped laboratory, but is applicable from a specimen of dried blood, the obtaining of the latter an easy matter, and the consultation with the laboratory man quite as easy for the ordinary practitioner, for the specimen may be sealed and sent by mail to the laboratory.

Thus by these means the existence or non-existence of syphilis in a given subject may be positively demonstrated. The days of scientific monstrosities as described by Julien have passed, when we are compelled to "wait until the system is saturated before treatment is initiated." In fresh cases the treatment may be begun with the establishment of the diagnosis without waiting for classical secondary symptoms to appear, and in older or doubtful ones instituted and stopped at the proper time, and in the wrongfully suspected the load may be lifted and the blight removed from their lives.

RECENT MEDICAL LEGISLATION IN WASHINGTON.

The most important measure to the medical profession, passed by the recent session of the Washington legislature, was that regulating the practice of medicine which now becomes the law of the state. Its principal new feature is the examination of osteopaths, who must thus obtain a license to practise, two of whom will be included in the new examining board, which the governor will soon appoint. In this respect it is modeled on the law of California, which is said to have given satisfaction during its two years of existence. What constitutes the practice of medicine is defined in few words, the substance being any mode or method of treating the sick. In deference to the religious aspects of therapeutics, however, it was considered necessary to make an exception in favor of certain quasi-religious methods employing treatment by prayer, which is not to be considered as practice of medicine.

The optemetry bill passed both the House and Senate and later became a law without the signature of the governor. If the medical profession was really opposed to the passage of this act, its members must have been asleep while it was under consideration. Though its supporters maintained an active lobby in its behalf, no earnest effort was made to prevent its passage. It provides for the examination and registration of opticians and thus gives them a legal standing, but at the same time it exempts traveling dispensers of glasses and does not seem to draw very close conditions about the practice of optometry.

The practice of medicine may be affected in some sections by the provision in the local option law concerning the sale of alcoholics in "dry" territory, where it can be obtained from a drug store only on a physician's prescription. The latter is forbidden to give such unless he is convinced it is to be used only for medicinal purposes. Various conditions are enumerated which are intended to more surely restrict this form of prescribing and a penalty given for its violation.

The largest sum of money appropriated directly for medical purposes was included in the act appointing a State Commissioner of Health, and materially enlarging the scope of the work of the health board. For its two years of labors $40,000 was appropriated, of which $3,600 will be paid annually to the commissioner, other amounts going to the state laboratory, control of contagious diseases, collection of vital statistics, etc. The commissioner is subject to the appointment of the state board.

The Ghent tuberculosis act, carrying an appropriation of $45,000 to purchase a site for a state sanatorium and its maintenance for two years, passed the House, but in the Senate was referred to the state board of health to investigate and render a report at the session two years hence. This was in the belief that the subject had not been sufficiently studied and that accurate data were wanting pertaining to the subject.

A bill was introduced appropriating money to purchase in Skagit County a farm to be used for the employment of the harmless insane, as an adjunct to the hospital at Steilacoom. This failed of passage, but the appropriation bill as passed carried a sum for this purpose. It remains to be seen what will become of the farm.

A bill providing for sterilization of certain criminals and criminal insane was introduced into the House, but so late that it did not reach the calendar. But the criminal code, which has become a law, has a provision empowering the judge, on commitment of a criminal, to order his sterilization if the case seems suitable for such action. The carrying out of this radical measure will be followed with interest.

The bill which was to reform the existing method of expert medical testimony by empowering the judge to appoint his own commission of experts, whose judgment was to constitute the official report in a given case, passed the Senate but was not considered by the House. This was a wise and necessary measure of reform and its failure of enactment is to be regretted.

RECENT MEDICAL LEGISLATION IN OREGON.

At the last session of the state legislature of Oregon many measures of interest to the medical profession were introduced. None are more worthy of commendation than those appropriating money for the care of the victims of tuberculosis. The more important of the two was that appropriating $20,000 for ground and buildings for a state sanatorium and $25,000 annually for two years for maintenance, which was accompanied by an emergency clause. The new institution will be erected at Salem. It is probable that operations looking to the immediate establishment of the institution will be pushed by those who are active in the campaign against this disease. A second bill permits the erection and maintenance of county sanatoria for tuberculous persons. This carries no appropriation but enables county authorities to provide for their own patients if they so wish.

The state institutions for the insane received fair treatment, the one already established being given $100,000 for new buildings which it sadly needs. Part of this is to be used for the erection of cottages for the physicians but most of it going to a new wing. In addition to this, $60,000 was given for the erection of a central heating plant. The usual biennial appropriation for maintenance was passed. Eastern Oregon has long wanted a branch hospital for the insane, for the erection of which the legislature voted $200,000, but the appropriation is subject to the referendum and cannot be used until after the next election. It is hoped and expected that it will receive the support of the voters of the sate.

A bill introduced by Dr. Ownes Adair to provide for sterilization of certain hopeless criminals and certain of the criminal insane passed both houses but was vetoed by the Governor. Many physicians favored the passage of this bill while others opposed it, though no contest was carried into the legislature. The most that could have been hoped for it was its educational value in pointing the way to prevent some of the evils of degeneracy by depriving badly tainted individuals of the possibility of procreating their kind. A bill to enforce medical examination of male candidates for the marriage altar, to eliminate those who are diseased, passed both houses but was vetoed by the governor, who declared it an insult to the young men of the state. There can be little doubt but this bill was right from a theoretic standpoint, but it is probable it would have been ineffective through the ease with which it could have been evaded.

A bill to regulate quack advertising matter was lost in the committee rooms. It is neeedless to say who prevented its coming to light. Put dollars against decency and there is little doubt as to which will win. The same agency was active in defeating the medical bill which was designed to regulate practice in Oregon. This was supposed to incorporate the best features of the California and Arizona laws. It was drawn with great care. The press attacked it on the ground that it was an attempt to create a medical trust, citing the chapter which defined the practice of medicine. It did not meet with the approval of all the members of the committee and an active lobby against it proved more than effective. It died aborning.

DR. FREDERICK A. COOK RELIEF AND RESCUE EXPEDITION.

An expedition is to be organized and sent out to rescue Dr. Cook, the famous Arctic explorer, who started in May, 1906, on an expedition to reach the North Pole. No word has been received from him since March, 1908, when he stated that he expected to attain his objective point and return in September. From his letters, it is believed he would accomplish his purpose, but that he has miscalculated the time of his return. It is believed he is still alive. The relief expedition will be fitted for a two years' stay, till Dr. Cook is either rescued or his fate ascertained. To secure the necessary funds for the expedition it is desired to collect money from many different sources. Dr. W. H. Axtell, of Bellingham, has been appointed by the central committee, of New York, as chairman of a sub-committee to raise funds in the Pacific Northwest. It has been suggested that the county societies take up this matter and contribute as societies, sending their funds payable to the "Cook Relief Fund," F. F. Handschy, Treasurer, Bellingham, Wash. This call appeals especially to the medical profession, thus to aid in the rescue of one of our number who has attained world-wide fame as an explorer. His work has come in close touch with the physicians of the State of Washington, owing to its proximity to Alaska, where Dr. Cook, in 1906, ascended and explored Mt. McKinley, the highest mountain on the American continent. Any additional information desired on the subject can be obtained from Dr. Axtell.

MEDICAL NOTES.

The Seattle Pulmonary Hospital. The board of trustees of this institution has purchased a site for a tuberculosis sanatorium at Riverton on the Tacoma Interurban road, eight miles south of Pioneer Square, the tract containing forty-two acres. It is a half mile from the station, situated nearly at the top of the bluff overlooking the White River Valley, with Seattle visible in the distance. The military road to Tacoma passes through it. The land has a gentle slope to the East, is cleared of timber except about eight acres, which contains a deep ravine with the original growth of trees, which is capable of artistic and useful landscaping. The latter contains springs which furnish an abundance of excellent water, sufficient for the needs of the institution for future years. From all points of view this is an ideal site for a sanatorium and the trustees are especially fortunate in securing a location so accessible to the city. It is planned soon to open a tent colony, which will later in the summer be replaced by suitable buildings. Under the supervision of Dr. Heg, secretary of the hospital trustees, it will be aimed to construct a group of sanatorium buildings that will embrace the most approved and useful features, whose superiority has been demonstrated in other institutions.

The Seattle Municipal Hospital. After years of shifting its dependent patients from pillar to post, Seattle has now a municipal hospital that will compare favorably with any similar institution of the land. It occupies the fourth floor of the new municipal building, a fireproof structure of the most approved construction. The hospital has its own entrance and elevator, thus giving it the privacy of a separate and distinct building. It contains medical, surgical and obstetric wards, besides necessary provision for nurses and physicians. It will accommodate fifty patients, besides the dispensary department, which is located in the basement. For sunlight and fresh air its situation makes it unexcelled, while the roof of the building offers an exceptional opportunity for a solarium. The city is to be congratulated in possessing such an ideal municipal building and Health Commissioner Crichton has the opportunity for establishing a model municipal hospital.

Clinical Diagrams. A series of useful diagrams, consisting of 25 sets, has been published by Lippincott Co., of Philadelphia, designed by Dr. J. C. Wilson, of Jefferson Medical College, at the price of 50 cents, intended for graphic representation of clinical phenomena for preservation with the notes of cases. They provide a unique method of recording useful and important facts that will appeal to any observing physician.

The American Association of Prison Surgeons. This organization, including the prison surgeons of the United States and Canada, will hold its annual session in Seattle, Aug. 4-7. Its president is Dr. D. Phelan, of Kingston, Ontario.

OBITUARY.

Dr. Frederick W. Sparling died in Seattle, February 28, from disease of the heart, following an attack of grippe. He was born in Limerick, Ireland, May 13, 1825. He moved to Canada in 1830. He received hs education in the schools of Quebec and obtained the degree A. B. from the Classical School of that city, after which he was attached for four years to the quarantine and hospital station of Lower Canada. He studied medicine at McGill, and after graduation practised a short time in Upper Canada, locating in Detroit, Mich., in 1859, where he practised till the outbreak of the civil war. He was appointed assistant surgeon in November, 1861. He served during the four years of the war, filling many appointments with distinction and taking an active part in many engagements. After ending his army service, in 1865, he served as post-surgeon at Nashville fortwo years. During the next ten years he served in various official capacities in Tennessee and Alabama, later being appointed assistant surgeon, U. S. A., at San Juan Island and Port Townsend, Wash. For a time he practised in Seattle and also served as superintendent of the territorial hospital for the insane. In 1880 the President of the U. S. appointed him to take the census of the territory. Under Presidents Garfield and Arthur he served as register of the land office at Vancouver. He was elected coroner of King County in 1896. In 1902 he was appointed Inspector of Immigration, which position he filled till his death. He was a man of the most genial and happy disposition. His vigor during recent years was remarkable for a man of his age, which he attributed to his exemplary form of life. In the varied forms of activity of a long and useful life, he was a faithful performer of duty and has left in the memory many friends the recollection of a life well spent and a happy old age.

REPORTS OF SOCIETY MEETINGS.

KING COUNTY MEDICAL SOCIETY.

President, Grant Calhoun, M. D.; Secretary, L. H. Redon, M. D.

The first regular semi-monthly meeting of the King County Medical Society was held at the Medical Library, March 1, with President Calhoun in the chair.

PATHOLOGIC SPECIMEN.

Gastroenterostomy. K. Winslow exhibited a series of specimens of this operation on dogs, explaining the technic and its development to its present perfection. He stated it should be done only for the purpose of drainage and explained the conditions requiring it. E. O. Jones discussed the function of the stomach for propelling food into the duodenum, the prevention of which by obstruction calls for this operation. Thus it is curative in all cases of benign stenosis and palliative in inoperable carcinoma of the pylorus. J. B. Eagleson believed the operation had been much abused in the past, but that it has a definite field. He reported several cases of congenital obstruction of the pylorus, for which he had performed this operation, which were cured by it. C. A. Smith mentioned a series of experiments he had formerly made along this line. He constricted the pylorus with a ligature to force the stomach contents through the new opening, and all the dogs died of peritonitis. E. P. Fick thought the operation indicated in dilatation of the stomach with spasm of the pylorus, and that it might be beneficial in hyperchlorhydria.

PAPERS.

Accidental Hemorrhage. R. J. O'Shea read this paper, in which he described the causes and symptoms of the condition, especially differentiating it from placenta previa. He mentioned the various methods of treatment, but specially favored the vaginal pack when properly applied. He detailed the technic of doing this correctly. He thought this procedure effectual by reason of compressing the uterine arteries and thus checking the bleeding.

Postpartum Hemorrhage. H. G. Lazelle read this paper, giving an interesting description of this condition with the common causes, and the accepted methods of treatment.

These papers were discussed together. R. M. Stith emphasized that they demonstrated that obstetrics should be regarded as surgery. Accidental may be followed by postpartum hemorrhage. It is essential that the second and third stages of labor be carefully observed to guard against hemorrhage. One should always be prepared for such conditions and be ready to deal with them. F. M. Carroll advocated astringents in the uterus, and in some cases Caesarian section may be called for. F. N. Chessman said that toxemia of pregnancy is the most important factor in producing accidental hemorrhage. J. C. Sundberg emphasized the necessity of being prepared for such emergencies as were described in these papers.

In accordance with the vote of the society, the president appointed the following committee to report resolutions on the death of F. W. Sparling: A. Raymond, J. B. Eagleson and J. H. Lyons.

The following were elected to membership: F. N. Chessman, D. A. Murray, C. R. Rorabaugh, A. P. Lensman, H. V. Würdemann, W. C. Woodward, H. B. Thomson, J. T. Mason, L. H. Jacobson, E. D. Kelley, L. Klempner and H. E. Coe.

The second regular semi-monthly meeting of the society was held at the medical library, March 15, with President Calhoun in the chair.

Clinical Case

Simple Fracture of the Scaphoid of the Hand. B. Hahn presented a man with this fracture, caused by a fall from a horizontal bar. The question of diagnosis between sprain and fracture was determined by a radiograph showing a transverse fracture of this bone. Before the introduction of the X-ray this could not have been determined. The pathognomonic symptom was present, pain in the "snuff box," elicited by pressure. Fixation and massage are the proper features of treatment. If there is also dislocation, removal of one or more of the fragments is indicated. P. W. Willis said the good result attained in this case is not always the rule. Usually there is some impairment of function and some pain persists. M. G. Sturgis related his personal experience with such a fracture 12 years ago. In the majority of cases the result is unsatisfactory. He believed that cutting down and removing fragments the most rational method of treatment. F. S. Bourns exhibited a radiograph of a case where the scaphoid sustained a comminuted fracture of the scaphoid. He favored immobilization for four weeks and massage. H. M. Read said these cases are important from a medico-legal standpoint. The trouble in treatment is that patients will not willingly submit to the necessary massage after the splints are removed, which opinion was also affirmed by M. Russell. E. R. Kelley mentioned four cases he had seen where one or both fragments had been removed and favorable results attained in all. W. M. McDowell inquired if the so-called automobile fracture was not of this bone.

Pathologic Specimen

Endocarditis with Vegetations of Gonorrheal Origin. E. R. Kelley presented the heart of a young man who was first seen with gonorrhea. He had no cardiac disturbance. A week later he had a chill, pain in side, bloody expectoration, cardiac area enlarged, heart irregular and rapid, leccocytes 30,000. Tentative diagnosis was made of pulmonary infarct. In a short time patient died at stool. Autopsy showed heart double normal size, with gonococcal vegetations on mitral valve. Previous to consulting Dr. Kelley the patient had received a series of injections of gonococcic vaccines which, however, he did not believe in any way responsible for this condition. A. Jordan discussed the instructive features of the case. E. P. Fick had made a culture from the blood and recovered the gonococcus. He described the method of growing this germ. He believed a bacterin should have been made and tried. He also suggested intravenous injections of formaldehyde and colloidal silver salts. B. Hahn stated some cases of malignant endocarditis had been reported improved by these silver salts. He had found no benefit from it with gonorrheal arthritis. P. W. Willis said gonorrhea may at any time become a constitutional disease and cited the case of a young lady who secondarily developed peritonitis and later died of pyonephrosis. H. M. Read said the gonococcus may lie dormant a long time in the host. Then the administration of a vaccine may cause it to become active, especially in the presence of a temperature. Hence one should use it with caution. The field of vaccine therapy is becoming limited. A. F. Heavenrich believed that where vaccines are given rationally and scientifically they should be administered in all cases of blood infection. W. T. Miles reported a case of gonorrheal arthritis with temperature who was cured by injection of gonococcic vaccine.

PAPER.

Effect of Climate on Disease. W. A. Shannon read this paper, in which he referred particularly to the Puget Sound climate and its effect on tuberculosis. He believes this disease can be cured as well here as in regions with more sun. F. S. Bourns thought that a white man can live safely in the tropics if he will adapt himself to his environments. He is too apt to attempt the customs of his own Northern climate, in which opinion J. C. Sundberg agreed.

The committee on resolutions reported suitable resolutions on the death of F. W. Sparling.

CHEHALIS COUNTY MEDICAL SOCIETY.

President, G. E. Chamberlain, M. D.; Secretary, C. E. Bartlett, M. D.

The monthly meeting of the Chehalis County Medical Society was held at Aberdeen, March 2, with President Chamberlain in the chair. The program consisted of a paper by R. E. Mohrmann on, "Injurious Effects of Nasal Obstructions." W. A. Smith, of Hoquiam, read a paper on, "Inflammatory Rheumatism." Both papers called forth a free discussion. The meeting was followed by a dinner.

SKAGIT COUNTY MEDICAL SOCIETY.

President, G. B. Smith, M. D.; Secretary, A. L. Brandt, M. D.

The Skagit County Medical Society met at Sedro-Woolley, Feb. 26, in an enthusiastic and well-attended meeting, with President Smith in the chair. Thirteen members were present. The following were elected to membership: Dr. Mertz, of Concrete; Dr. H. E. Cleveland, of Burlington: Dr. Dorsey, of Sedro-Woolley. It was planned to arrange for two papers at future meetings and also to inaugurate a series of addresses from leading physicians from other cities.

WHATCOM COUNTY MEDICAL SOCIETY.

President, S. H. Johnson, M. D.; Secretary, J. R. Morrison, M. D.

The Whatcom County Medical Society met in regular session at the Baker Hotel, March 8, President Johnson being in the chair. Seventeen members were present. Minutes of the previous meeting were read and adopted.

Article seven of the By-Laws was amended so as to permit such articles or transactions as the society thought best to be given to the papers for publication, by a member specially authorized by the society to make such report.

Dr. Axtell gave a report of the relief work for Dr. Cook. Motion was made and carried that each member give to the treasurer of this society as he felt able for this relief fund.

Papers.

Postpartum Hemorrhage. F. V. Shute read a very interesting paper on this subject. He dealt with the causes and treatment, reporting cases to illustrate the conditions spoken of. The paper was discussed by all the members present, each giving reports of cases wherever any interesting points were encountered.

Abdominal Surgery. This was a paper given by A. M. Smith. He referred frequently to the methods and work he saw the Mayos do when visiting their hospital last fall. The paper was both interesting and instructive and was discussed by several of the doctors present.

BOOK REVIEWS.

Edited by
Kenelm Winslow, M. D.

The Theory and Practice of Infant Feeding, with notes on development. By Henry Dwight Chapin, A. M., M. D., Professor of Diseases of Children at the New York Post Graduate Medical School and Hospital, etc., etc. Third edition, with numerous illustrations. Cloth, pp. 250, $2.25. William Wood & Co., New York, 1909.

Chapin gives the reader a fuller comprehension of the chemistry and physical properties of milk than any other writer on the subject of infant feeding. He treats the subject from a broad standpoint of comparative anatomy and physiology. He shows that the milk of different animals differs chemically and physically; that the chemical variations are due to developmental needs and to the kind of digestive apparatus. Moreover, the author proves that babies cannot be fed by simply imitating chemically human milk by the use of cow's milk. It is, in fact, impossible to imitate human milk chemically with cow's milk, as the composition of the lactose, proteids and fat differs in each, and also their physical properties. Imitation of adult standards for diet by estimating calorifacient values is again shown to be useless in infants, as the digestive organs do not attain complete development and digestive powers for two years.

Chapin bases infant feeding with cow's milk on experience then, and not on theory. His practical suggestions for feeding with top milk are exceedingly simple and satisfactory. For dilution he leans toward cereals and gives rules for standardization of gruels. The book surpasses any other on the subject in its breadth of view and in its detailed information about milk from chemical, physical, physiologic and bacterial standpoints. Rules are furnished for altering the composition of the diet of nursing mothers in order to alter the composition of their milk. Professor Conn has written a chapter on Bacteriology of Milk, in which his method for making a bacterial analysis of milk is to be found. The methods formulated by the associated bacteriologists of this country are, however, now the standard for such work. Unless uniform methods are used in making bacterial counts the result is of little value. WINSLOW.

Diseases of the Digestive Canal (Oesophagus, Stomach, Intestines). By Paul Cohnheim, Specialist in Disease of the Stomach and Intestines in Berlin. From the Second German Edition. Edited and Translated by Dudley Fulton, M. D., Lecturer on Medicine, University of Southern California, Los Angeles. Illustrated. Cloth, 375 pp. J. B. Lippincott Company, Philadelphia and London.

This book is based on the methods used by Cohnheim in demonstrating his cases in his clinic, in Berlin, and also the methods he has obtained in the clinic of Boas, whose assistant he was for a number of years. It is eminently practical and in many ways excels the writings of Boas himself. He has omitted the anatomic, physiologic and pathologic very largely and also notes of reference. He is one of the most consistent German authors in matters of treatment. He puts great stress on anamnesis and symptomatology, especially the subjective. The section dealing with this matter is especially good, and in it is much that is not in the usual text-book, in the way of practical hints in examinations, etc. A step in advance is absence of vagueness in diction. One knows what the author is talking about exactly, and this matter he handles boldly, fearlessly—it is his own. There is a certain individuality about the book that one must admire, but with no element of intolerance toward the views of others. For the scope of matter considered it is probably the best thing published in English. FICK.

A Text-Book of General Bacteriology. By Edwin O. Jordan, Ph. D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Octavo of 557 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1908. Cloth, $3.00 net.

This book deals with bacteriology from a somewhat different viewpoint from any work yet published on the subject. Following the methods of studying bacteria there is annexed a descriptive chart, adopted by the Society of American Bacteriologists, which greatly simplifies the difficulty of classification. The succeeding chapters deal with the subject in the most elementary way necessary for students, but the writing is clear and free from ambiguity. The chapter on immunity is thoroughly up-to-date and while very condensed does not omit a single important point, the references to recent literature showing the writer widely read on that very interesting phase of bacteriology. Perhaps in no other part of the book does Professor Jordan show himself the master of his subject as he does in dealing with the subject of tuberculosis. The question of transmission of human and bovine tuberculosis is discussed with tact and diplomacy, prompted by a truly scientific mind and a broad understanding. In discussing the subject he says, what has been well proved, that while bovine infections may be communicated to man it is of very rare occurrence. The micro-organism of syphilis is described under its new name, treponema pallidum, with a beautiful plate. The pathogenic protozoa are included in the work and the final chapters deal with milk, air, soil, water and bacteria in the arts and industries. It is one of the best elementary works we have yet had and deserves a wide sale. PASCHALL.

Applied Surgical Anatomy, Regionally Presented. For the use of Students and Practitioners of Medicine. By George Woolsey, A. B., M. D., Professor of Anatomy and Clinical Surgery in Cornell University Medical College, New York. New (2d) edition, enlarged and thoroughly revised. In one very handsome octavo volume of 601 pages, with 200 illustrations in black and colors. Cloth, $4.50 net. Lea & Febiger, Philadelphia and New York, 1908.

That the study of anatomy from the standpoint of its practical application is a necessity, in both modern medicine and surgery, is agreed to by everyone. One who is at the same time a profound anatomist and a practical surgeon should be eminently fitted to prepare a work on surgical anatomy. Perusal of this volume does not disappoint our expectations. The text is a model of clearness and conciseness. Especially good are the sections on cerebral localization and cranial topography; and the chapter on the anatomy of the pelvis. The work is well illustrated with numerous cuts, some of them in colors. Fault might be found with some of the pictures for being too schematic, but on the whole the work is a good one and will prove an admirable guide in surgical anatomy. JONES.

Clinical Diagnosis and Treatment of Disorders of the Bladder, with Technicque of Cystoscopy. By Follen Cabot, M. D., Professor Genitourinary Diseases, Post-Graduate Medical School; Attending Genitourinary Surgeon, Post-Graduate and City Hospitals, New York. 8vo,, 225 pp., 41 illustrations, 1 colored plate. Prepaid, $2.00. E. B. Treat & Co., New York.

This little volume is largely a record of personal experience. The principal method of diagnosing and treating disorders of the urinary bladder have been carefully considered and illustrated with cases from a large clinical material. To the information and experience of others the author adds critical remarks and conclusions derived from his own professional experience. This is what makes this book so eminently readable. The chief point concerning electric illumination of the vesical cavity and the technic and indications are fully described. The reader will also find some excellent hints in case recording. The leaflets with instructions to those suffering from gonorrhea and syphilis are fine models and will certainly impress the patient with the advice they contain. We wish this little book the success it deserves. LENSMAN.

NORTHWEST MEDICINE

THE JOURNAL OF THE
WASHINGTON STATE MEDICAL ASSOCIATION.

May, 1909

ORIGINAL CONTRIBUTIONS

LEUKEMIA.*

By Bert Thomas, M. D.,
WALLA WALLA, WASH.

This is a disease characterized by a marked increase in the white blood cells and a proliferation of lymphoid tissue either of the spleen, lymph glands or bone marrow or of all of these. The disease occurs in two forms, according to the predomination of characteristics, as splenomyelogenous and lymphatic leukemia. In the former the changes are confined principally to the spleen and bone marrow, the blood showing a marked increase in the elements derived from the bone marrow. In lymphatic leukemia the changes are confined to the lymph glands and the elements which are increased are those derived from this source.

Of the etiology we know little. While the disease is comparatively rare it is more common than was supposed a few years ago. It is a disease of the middle period of life, but may occur in infancy and old age. Osler says, "The disease, in women, is most common at the climacteric," and to prove the hereditary character of the affection, he cites a case in which a leukemic mother passed through three pregnancies bearing non-leukemic children, while her mother and grandmother as well as one brother suffered from symptoms suggestive of leukemia.

Opposed to this Cabot says, "It certainly has no known relation to inheritance, to the climacteric, to previous hemorrhages, to malaria, or to injury." It is more common in males than in females.

Collins cites a case where the disease followed immediately upon an injury to the splenic region and Dr. Chas. E. Simon has reported a case where it followed an injury to the bone marrow, compound fracture of the right ankle. (*Am. Jour. of the Med. Sciences, March,* 1907.)

Regarding the pathology of the leukemias, investigators differ much. The blood forming organs, spleen, bone marrow and lymph glands, also liver and lungs are affected principally. Some regard the process as essentially a hyperplasia with infiltration of the various organs affected. In myelogenous leukemia there is hyperplasia of the leucocytic elements, with myeloid transformation of spleen and lymph glands. In lymphatic leukemia there is lymphoid change of the spleen and bone marrow, with increase of the lymphocytes. The structure first involved is the bone marrow.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

Other investigators regard the process as a neoplastic one and place the leukemias with Hodgkins disease and chloroma. The blood picture in chloroma is similar to lymphatic leukemia and many of the clinical symptoms are identical. The view of malignancy is based upon a typical growth of cells, metastases due to invasion of the capsules of lymph glands and neighboring tissues. The walls of blood vessels are invaded and secondaries thus develop in distant organs. From histologic and clinical characteristics these diseases have been classed with the sarcomata. To a great extent the cellular elements forming the infiltration of the spleen, liver, lymph nodes, and lungs are due to filtration of the excesive numbers of leucocytes in the circulation.

The spleen is greatly enlarged in the splenomedullary form and may be adherent to all surrounding organs, diaphragm and stomach. Its vessels are enlarged. It undergoes a myeloid change so that microscopically its tissue closely resembles that of bone marrow. Malpighian bodies are absent. Infiltration tumors are present. The adherents of the neoplastic theory claim these changes are not due to metaplasia but metastases from the bone marrow. The bone marrow undergoes a myeloid change. The fat disappears and its place is taken by cellular tissue. The blood elements which form the characteristic blood picture of the disease are constituents of the bone marrow. Nucleated red cells are present in all stages of development; polynuclear and mononuclear esinophile cells are also present. Myelocytes (cells with large nuclei and neutrophile granules) are more numerous than in the circulation.

The lymph glands undergo myeloid change and become softer than normal but rarely larger in the myelogenous form. Enlargement is not a marked characteristic, but may be found in the intra-abdominal group. Microscopic examination shows different stages of myeloid change from normal to complete myeloid glands. The blood picture is similar to that of the splenic form.

The liver is enormously enlarged in same cases and the columns of hepatic cells are compressed by infiltration of leucocytes, showing in many places complete atrophy. So great is this infiltration that the color of the liver is grayish yellow. The leucocytes may be confined to the capillaries but definite tumors may be present, due to proliferation of extravasated leucocytes. A similar change may take place in the kidneys.

The lungs are infiltrated with myeloid elements. The disease may reach an advanced stage before its nature is recognized. The patient may ask relief from some special symptom, as hemorrhage or abdominal enlargement. Hemorrhage is common. The anemia may be slight.

In splenomedullary leukemia the enlargement of the spleen is the most prominent symptom. Pain and tenderness are common, but the spleen may be enormously enlarged without any pain. The enlarged organ may fill half or more of the abdominal cavity. Its size varies from time to time, being larger after a full meal and smaller after x-ray treatment, hemorrhage or free catharsis. Ascites may be present. Pressure by the enormously enlarged spleen may cause embarrassment of the function of the heart. There may be hemic murmurs. Epistaxis is common and hematemesis and cerebral hemorrhage may occur. Retinitis due to hemorrhage and leucocyte infiltration is not unusual and exophthalmos due to leucocyte infiltration may be a symptom.

In the latter stages edema may occur and when this takes place in the lungs may be followed by pneumonia. Dyspnea, weakness and pallor may be due to the anemia. Of the gastrointestinal symptoms the nausea and vomiting are the earliest. Diarrhea is sometimes troublesome and ulceration may be present but hemorrhages are rare.

The symptoms on the part of the nervous system are headache and dizziness caused principally by anemia. Cerebral symptoms may be caused by hemorrhage. Fever is a variable symptom and may be absent or may reach 102° or 103° F.

Blood. In this as with all blood diseases the diagnosis is made by means of the microscope. In splenomyelogenous leukemia the most marked change is the enormous increase in the colorless corpuscles. The ratio of the leucocytes to the red cells may be as 1 to 10 or 1 to 4 or 5. The leucocyctes in number may equal the number of red cells.

The small mononuclear leucocytes are increased to a small degree while relatively they are diminished. The eosinophile cells are present in nearly normal proportion but the absolute increase is very great, forming a marked characteristic of leukemic blood. The polynuclear neutrophile cells may be in normal proportion or slightly decreased. These cells are constant in neither number nor size.

The most characteristic leukemic cells are the myelocytes. These are large, mononuclear neutrophile cells. Mast cells, or polynuclear cells with coarse basophilic granules, are also present in leukemic blood and may occur in greater numbers than the eosinophile cells. Of the nucleated red blood corpuscles normoblasts and megoloblasts are present.

The red count varies from 2,500,000 to normal. The hemoglobin varies from 20 per cent. to normal.

The blood in lymphatic leukemia possesses as its chief characteristic a great increase in the lymphocytes, while the other forms of leucocytes are relatively diminished. The white count is not as high as in splenomyelogenous. Osler says a proportion of one to ten would be extreme. The hemoglogin varies from 20 per cent. to normal.

Leukemia can be recognized only by the use of the microscope in examination of the blood. It is to be differentiated from Banti's and Hodgkin's disease, with which diseases it is clinically identical. The points to be noted in microscopic examination of the blood are: Real and relative leucocytosis, relative and absolute increase in eosinophile cells, an absolute increase in polynuclear neutrophile cells, presence of myelocytes in great numbers, presence of mast cells; on the part of the red blood cells the presence of normoblasts and megaloblasts.

The prognosis is doubtful. Recovery may occur; recurrences are frequent. Many cases terminate unfavorable within three or four years. Cases with a tendency to hemorrhage do badly. High temperature and gastrointestinal disturbances are unfavorable symptoms.

The treatment may be dietetic, x-ray or surgical. The morbid process cannot be met. Fresh air, good diet, rest, physical and mental are important. Of medicines arsenic has the most favorable influence upon the course of the disease. Iron is also of value. At the present time the palliative treatment which offers the greatest relief from this disease is the application of the x-rays. Under the continued use of these, applied to both the long bones, bone-marrow and splenic area, the spleen diminishes in size as do the enlarged glands under exposure; the white cells grow less and a normal white count may be obtained. A leukolytic substance is produced which, destroying the leucocytes rapidly, probably accounts for the marked reaction in some cases. The red cells are increased in some cases but in many cases they and hemoglobin remain far below normal.

The different types of white blood cells generally approach the normal but in most cases, in spite of x-ray treatment, myelocytes appear in the circulation, showing that the disease is being held in check but not cured. This treatment is palliative not curative. Relapses occur frequently as under other methods of treatment but at present it gives the greatest relief from symptoms. Sometimes this method of treatment not only fails to relieve the patient but may make his condition worse, causing fever, weakness, etc. The chronic cases are more improved than the acute.

Considering the process essentially a sarcomatous one, several investigators have taken advantage of the fact that acute infections frequently improve the blood condition and have introduced in the treatment of the leukemias the use of Coley's mixed toxins. However, this treatment even in cases of sarcomata is still young and the number of cases of leukemia thus treated are too few to give reliable results.

Of the surgical measures employed to relieve the symptoms of splenomyelogenous leukemia, splenectomy has received the most attention and it has been the universal opinion that this procedure is definitely contraindicated. Johnston reports (*Annals of Surgery, July,* 1908) to the present time 49 spenectomies with six recoveries and forty-three deaths, a mortality of 87.7 per cent. Certainly these figures are not encouraging to the majority of surgeons.

While the more radical operation of splenectomy is contraindicated, many cases can be improved by a more conservative operation which in some cases amounts to an exploration of the splenic area through an abdominal incision. In this connection four cases will be reported which were improved by such an operation.

Case I. R. N., male, age 38. Family history negative. Personal history: Had typhoid fever five years ago, recovery complete. One year ago had an attack of vomiting, followed by severe diarrhea; had abdominal tenderness since, especially on left side while abdomen was enlarged; several sharp attacks of pain during past six months. Two days ago had an attack of abdominal pain with vomiting. Has been very weak lately.

Patient is medium build, skin sallow, musculature fair, chest negative, abdomen prominent, very rigid and exceedingly tender, especially over McBurney's point. Percussion denied because of tenderness. Urine negative.

Blood. Flow poor, color pale. Red cells 3,000,000; white cells 350,000; hemoglobin 60 per cent. Differential examination showed a marked increase in the polymorphonuclear and eosinophile cells and the presence of mast cells and myelocytes in great numbers.

The clinical diagnosis was acute appendicitis which was changed to splenomyelogenous leukemia by the blood examination. Examination under anesthesia showed an area of dullness in the region of the appendix and another in the splenic area.

The abdomen was opened in the medium line and a gangrenous appendix was removed. The mass in the splenic region proved to be an enlarged spleen which was adherent to all the surrounding organs. The adhesions were broken up when not very dense and otherwise were divided between ligatures. When possible raw surfaces were covered. The abdomen was closed without drainage.

Blood count on the second day showed the white cells to have fallen to 100,000. On the 20th day the white count was normal. The red was 3,500,000, hemoglobin 75 per cent. The patient made an uneventful recovery and was well with a normal blood count fourteen months later.

Case II. Mrs. W. E., age 36. Family history negative. Personal history unimportant until about a year and a half ago, when abdomen began to enlarge and became tender. Pain was general. Free fluid was demonstrated by the attending physician. There was an attack of nausea and vomiting followed by diarrhea. These attacks occurred at menstrual periods. These were very irregular, with periods of amenorrhea and then severe hemorrhage, accompanied by severe pain, especially on left side.

Patient is anemic, of slight build, chest negative, with exception of hemic murmurs at base of heart. Abdomen enormously distended and filled with ascitic fluid.

Various diagnosis had been made. The patient was sent to the hospital with the diagnosis of ovarian cyst and an operation advised. The blood examination showed hemoglobin 50 per cent., red cells 3,000,000, white cells 400,000. The white formula showed an increase in eosinophile cells, the presence of myelocytes and mast cells.

The diagnosis was changed to splenomyelogenous leukemia and the condition explained to the patient, who demanded surgical relief, preferring to stand by the former diagnosis, and demanded that the tumor be removed. A median incision was made and the free fluid withdrawn. There was a cystic ovary on the right side about the size of an orange, which was removed. The spleen was enormously enlarged and densely adherent to all the surrounding organs. These were broken up or incised between ligatures. After freeing the spleen completely the incision was closed.

Blood examination on the 12th day showed red cells 3,500,000; white cells 60,000; hemoglobin 70 per cent. Symptoms disappeared during next six months and patient was in good health two years later.

Case III. Female, age 32. Family history negative. Personal history negative until eight months before entering the hospital, when she began to be bothered with frequent attacks of epistaxis and had one attack of hematemesis. Following this she suffered with nausea and vomiting for several weeks, when she noticed the enlargement of the abdomen.

At this time a blood examination showed hemoglobin 65 per cent.; red cells 4,000,000; white cells 450,000. She was put upon the usual medicinal treatment but grew gradually worse. The x-rays were tried but she reacted so violently that this treatment had to be discontinued. The abdomen filled with fluid and the patient was sent to the hospital for relief from this symptom. The blood count showed 3,000,000 red cells; 600,000 leucocytes and 60 per cent hemoglobin.

An incision was made, the fluid removed and the adhesions binding the spleen to other organs divided between ligatures. There were several severe hemorrhages but they were readily controlled. The abdomen was closed without drainage. After operation blood examinations were denied, the patient claiming that the charm would be broken and she would get worse. Her wound healed promptly and at the end of the second week she left the hospital, all clinical symptoms having disappeared except her adenitis. No further history was obtainable.

Case IV. No family or personal history could be obtained. The blood examination showed hemoglobin 65 per cent.; red cells 4,000,000; white cells 1,360,800. (1 to 4). The patient was greatly emaciated and very weak. Abdomen greatly distended. A diagnosis of "abdominal tumor" had been made and relief promised by means of surgical operation. The patient on entering the hospital demanded an operation.

Dr. Keylor, on February 13, 1906, opened the abdomen and explored the splenic region. The spleen was enormously enlarged, filling the entre abdomen, and was strongly adherent to all the surrounding organs. The adhesions were broken up, the dense ones divided between ligatures. When entirely free of all adhesions and hemorrhage controlled, the spleen was returned to the abdominal cavity and the incision closed. The recovery was prompt and uneventful. At the end of the first week the blood count was reds 4,500,000; whites 400,000; hemoglobin, 70 per cent. Further examinations were denied. The patient was alive two years later and apparently free from symptoms.

These cases extend over four years' observation and, being in a measure isolated, the results do not possess the value of a series. They suggest the possibility of surgery when the x-rays are not well borne. No attempt will be made to explain the results of these operations, based upon the present view of the pathology of the disease. The reaction of the spleen and bone marrow may not be just as is held by the present pathologic view of the disease. Perisplenitis may disturb the function of the spleen enough to destroy the reaction between that organ and the bone marrow.

Papers by Osler and Cabot have been consulted in the production of this paper, as well as general medical literature.

THE TREATMENT OF TETANUS.*

By Charles M. Doland, M. D.,
SPOKANE, WASH.

Osler defines tetanus as an infectious malady, characterized by tonic spasms of the muscles with acute exaccerbations. Our knowledge of its existence is as old as the history of medicine, Hippocrates giving a good description of its symptoms in his writings and recognizing both its gravity and that it followed wounds. Galen held that the lesion was in the spinal marrow, a view that persisted for centuries. Sir Charles Bell and Majendie, as the result of experimental work, announced that the motor tract was principally involved.

In 1880, Sternberg produced tetanus in animals by injecting gutter earth and water. Later Nicolaier demonstrated that pieces of infected earth would, when injected subcutaneously at the root of the tails of animals, produce the disease. In 1885, he discovered the organism, although he was never able to grow it in pure cultiure. He made numerous interesting observations concerning it, *i. e.,* that it was only found, except in wounds, in the superficial layers of the soil in certain areas and he accurately described the organism. Kitasato was the first to grow the tetanus bacillus in pure culture, having discovered the high resistant powers of its spores to heat and, what was even more important, that it was anaerobic.

Bacteriology. The entire treatment and the rationale of the management of this disease is based directly upon our knowledge of its bacteriology and thus again the debt of "practical medicine" to pure science is shown. McFarland, in his text-book upon the pathogenic bacteria, describes the tetanus bacillus as follows: "One of the most exquisitely toxic bacteria of which we have any knowledge is the bacillus discovered by Nicolaier, in 1884, obtained in pure culture by Kitasato, in 1889, and now universally recognized as the cause of tetanus. It is a peculiar organism whose striking feature is a considerable enlargement of one end, in which a bright round spore is seen."

Abbott likens the shape of the bacillus to that of a pin, the head of which is formed by the spore. The bacilli are long, rather slender, have rounded ends, seldom unite in chains or pairs, are motile and have no flagella. The bacilli stain readily with the ordinary aqueous dyes and by Gram. It is a common saprophytic organism which can be found in most garden earth, in dust, in manure and in the intestinal discharges of animals. It is extremely difficult to isolate and cultivate because it will not grow where the smallest amount of oxygen is present. It is a typical obligatory anaerobic micro-organism and can not be brought to development under access of oxygen. It thrives in an atmosphere of pure hydrogen, but not in one of carbonic acid. Spores of the tetanus bacillus, when dried upon bits of thread and subsequently kept exposed in the air, retain their vitality and virulence for months. Their vitality is not destroyed by an exposure of one hour to 80° C. (144° F.). On the other hand, an exposure of 5 minutes to 100° C. in the steam sterilizer kills them. They resist the action of 5 per cent. carbolic acid for ten hours, but succumb in fifteen hours. They are killed in three hours by a 1:1000 solution of corrosive sublimate. Their toxin is produced rapidly, for Kitasata found that, if mice were inoculated at the root of the tail, and afterwards the skin and subcutaneous tissues around the site of inoculation were either excised or burned out, this treatment would not save the animals, unless the operation were performed within an hour after inoculation.

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*Read before the Spokane County Medical Society, Spokane, Wash., April 1, 1909.

Pathology. There are few definite lesions and no constant changes in the brain and spinal cord. Anders says: "A careful postmortem examination often reveals small wounds, abrasions or evidences of injuries or penetrating foreign bodies most commonly in the hands and feet. Various appearances are presented by the wound or injured part; it may show the presence of pus, collateral hyperemia and more or less hemorrhagic extravasation. The nerves leading from the wound are often the seat of inflammation. In acute cases the density of the cerebral tissues is increased and the gray substance is distinctly hyperemic. In the chronic form the brain and meninges are somewhat edematous and minute hemorrhages have been observed. Congestion of the nerve centers of the medulla and cord, often resulting in inflammation and softening, especially in the territory of the anterior horns, is commonly noted. Perivascular exudations and granular changes in the nerve cells are among the histologic changes."

The character of the wounds which are followed by tetanus is generally the punctured variety, *i e.,* those produced by stepping upon a nail, prong of a pitchfork, splinter, etc., or by an object driven into the tissues such as a gun wad or cap. The wound thus produced is often closed over at its outer end, thus producing the necessary conditions for the growth of the tetanus bacillus, *i. e.,* the absence of oxygen. Or, if there is originally oxygen in the wound, the tetanus bacillus may, as McFarland suggest, be accompanied by an aerobic organism which exhausts the oxygen present. The bacillus enters through a wound of the nature mentioned which is contaminated by garden earth, dust, wound discharges, etc. If the anaerobic conditions prevail, or are produced by other organisms accompanying the tetanus bacillus, the organism flourishes and elaborates its toxins. Abbott believes that the toxins are often carried into the wound with the bacillus, which accounts for the rapidity of the infection.

The tetanus bacillus, like the diphtheria bacillus, remains at the seat of inoculation and the infection is produced by the toxins which it produces. The method of dissemination has been worked out definitely, only in the last few years. Meyer and Ransom proved that the toxins were carried to the spinal cord by the motor nerves. The sensory nereves never carry them and finally the toxins are carried, not by the lymph channels in the nerve, but in the protoplasm of the neuron. These investigators say, however: "These results should not be interpreted as precluding the possibility of tetanus developing, even when the nerves of the limb in which the toxins were injected have been divided." When the toxins have been absorbed into the body some of the toxin diffuses itself through the tissues until it comes in contact with the terminal filaments of a motor nerve, through the medium of which it is transmitted to the motor ganglia of the cord. The rest of the toxin is taken up by the lymphatics, enters the general circulation, where it is distributed by the capillaries and is thus brought into contact with motor nerve endings through the body. When it reaches the cord it travels upward to the medulla. The sensory nerves play no part in the transmission of the toxin, at least in the clinical manifestations of the disease. The effect of the toxins on the spinal cord is expended chiefly on the motor tracts.

Archibald sums up the work of Meyer and Ransom on the physiologic action of the toxins on the nervous system as follows: "At the point of inoculation the toxin is sucked up largely by the motor nerves, in all probability by their bared axis cylinder endings from the lymph spaces, and is by this path transported to the motor ganglia of the cord." These are at first only put into a condition of hyper-excitability, so that they are aroused by the stimuli which are constantly streaming in from the sensory periphery, and which ordinarily remain latent so far as exciting motor action is concerned. These stimuli are now sufficient to cause a continuous discharge of energy much greater than the ordinary, sufficient, indeed, to bring the muscle into contraction. This gradually increases in severity until we have the typical convulsions with opisthotonos and the characteristic spasms of the muscles of the jaw and face.

Case 1. Tony S. White, male, married, Italian, laborer, age 23. On admission to the Pennsylvania Hospital, 9-23-1905, patient complains of inability to open jaw, rigidity of muscles and convulsions. P. I. One month ago patient burned his left arm with burning coal oil. Five days ago began to notice stiffness of jaws and inability to open them; has also had convulsions and great muscular rigidity.

Physical examination. Patient is a well nourished, well developed, muscular Italian. Is plainly in great distress and has had several tetanic convulsions. Skin. On his back he has an erythematous eruption which is faintly papular. During the convulsions the papular character is much more marked. Pulse slow and full. Right axillary and inguinal glands are palpable. Muscles are well developed; at present time they are greatly contracted and rigid, those of the back so strongly that the back is greatly arched, producing well marked periods of opisthotonos. Muscles of jaw are rigid. L. c. m. between the middle incisors of the upper and lower jaws. Lungs and heart normal.

9 P. M. Attempt at lumbar puncture unsuccessful; 45 cc. of tetanus antitoxin given subcutaneously at 9 p. m., 12 p. m. and 4 a. m. The other treatment consisted of chloral, gr. 15, every 4 hrs. and carbolic acid, m. 15, of a 5 per cent solution every hour hypodermically. Patient gradually recovered and was discharged cured on the 23d day. No smoky colored urine was observed at any time.

Case. 2. Gabriel M. Male, white, married, Itaian, laborer, aet 55. Admitted to the P. H. 10-20-1905. P. I. fourteen days ago he ran a nail into his foot. Five days ago trismus and rigidity of cervical muscles appeared. Yesterday muscles of body became involved.

Physical examination. Patient is a well developed, well nourished, muscular white male. He is lying on his right side with knees flexed. Neck is very rigid. Abdominal muscles are rigid and hard. Jaws are practically closed, only ¼ inch between the middle incisors of upper and lower jar. There is a faint but diffuse erythematous eruption on chest and abdomen; on the back this eruption is very marked. It fades on pressure. On the right foot there is an incision wound at the base of the great toe, which was made in the receiving ward, where the original wound was opened and curetted. Pulse rapid and regular. Heart and lungs normal. Liver and splenic dullness normal. Abdomen rigid as noted above.

On admission 60 cc. of tetanus antitoxin given and repeated in 4 hours. Other treatment, carbolic acid, m. 10 of a 5 per cent. solution every hour hypodermically, later increased to 15 m. Chloral, gr. 15, every 4 hours, and later increased to every 2 hours. Whisky ½ oz. every 4 hours. Patient gradually became worse and died on the 6th day. No smoky urine.

Case 3. James M. Admitted with punctured wound of hand 4 days old. Patient did some work about a stable. There was beginning stiffness of the arm on the affected side. No evidence of pus present. Wound incised freely and 60 cc. tetanus antitoxin given about the wound and in the abdominal wall. No further symptoms manifested.

TREATMENT.

Prophylaxis.. Prevention is the keynote of this disease. As Welch has pointed out, the antitoxin of tetanus has proved to be rather a disappointment in treatment of this disease, for the amount needed to save the patient from the toxin being manufactured in his body by the bacilli increases so rapidly and enormously with the day or hour of the disease as to make the dosage, which increases with millions of times where that of diphtheria antitoxin increases but tenfold, a matter of difficulty and uncertainty. Nocard also calls attention to the fact that the existence of tetanus is unkown until there is sufficient toxemia to produce spasms, and that, therefore, it is impossible to attack the disease in its inception; we are obliged to meet it on the same grounds as diphtheria in the later days of the disease, a time when it is well known that the chances of improvement are greatly lessened.

The use of tetanus antitoxin as a prophylactic measure has proved a brilliant success, however. Quoting from the *Journal of the A. M. A.,* for July, 1908, we gain the following statistics in proof of the foregoing assertion: "When the journal first began its statistical studies, five years ago the 4th of July, tetanus cases numbered 415, but after the publicity given these figures and the widespread demand for thorough surgical treatment and antitoxin prophylaxis in all blank cartridge and cannon cracker wounds, the morbidity dropped remarkably. From the 415 cases of 1903 the number was reduced to 105 in 1904, 104 in 1905, 89 in 1906 and to 73 in 1907. As this improvement took place while the total number of accidents remained practically stationary and with the number of deaths from other causes than tetanus rising steadily from 60 in 1903 to 102 in 1907, it is evident that the annual saving of 300 or more lives has been accomplished, in spite of public carelessness, and official incompetence, through the activity of the medical profession. We have observed with no little satisfaction that nearly all the tetanus cases have developed in those who did not receive medical attention in time to check the disease, a statement that we could not make five years ago."

The Society of American Bacteriologists, in Dec., 1906, adopted a resolution in regard to the standardization of tetanus antitoxin and decided that the minimal immunizing dose for a case of possible tetanus infection should be 1500 units. As all American serum manufacturers are required by law to comply with the standard set by the Marine Hospital Service and standardize their sera by toxin furnished by the service, after the manner described in Bulletin No. 43, of the Marine Hospital Service of the U. S., we may rely on uniform strength in the preparations used.

Hence, in all punctured wounds we should open them freely and cleanse them thoroughly, preferably curetting and then lightly packing them, so that the atmospheric air has access to the depths of the wound. Do not use carbolic acid or any substance that will leave a coagulum and thus shut out the air. In patients with 4th of July wounds, we should, in addition, inject an immunizing dose of antitoxin at the site of the injury. These measures had best be carried out under a general anesthetic.

Treatment After Clinical Symptoms Appear. The original wound should be freely opened, curetted and lightly packed to allow the free ingress of oxygen. Tetenus antitoxin should be injected into the tissues about the wound. Reasoning that the toxins were carried by the motor nerves, it was decided to cut down on the sciatic nerve in a couple of cases at the Pennsylvania Hospital, where the infection was in the foot, and give intra-neural injections of antitoxin, but we were not encouraged by our results. Injections into the spinal canal are warmly advocated by most authorities and are undoubtedly better than the subcutaneous use of the serum. Like all operative intervention, after the spasms have begun, this should be done under a general anesthetic, preferably chloroform, as otherwise the irritation will excite convulsions and in case of lumbar puncture will prevent the success of the operation. The injection should be repeated at four-hour intervals for at least three injections. Rogers advocates injecting the serum into the cord itself.

Injections of carbolic acid were found by Bacelli, of Rome, to give great relief in cases of neuralgia and that his patients exhibited a great tolerance to it, and he accordingly tried it in tetanus. He claims that it is an antiseptic, an anelgesic, has the property of diminishing reflex activity in the spinal cord, has an almost specific effect in inhibiting the growth of the organism and neutralizing its toxins. He states that 60-80 gr. may be administered with impunity in the course of a day to a tetanus patient. In my two cases we used a 5 per cent. solution and gave 10-15 m. every second hour, or hourly. This treatment has been used in many cases at the Pennsylvania Hospital, and the general opinion was that it was beneficial

Roux has advocated the injection of an emulsion of the brain of a freshly killed dog, rabbit, or sheep, on the ground that brain tissue has an especial affinity for tetanus toxin, using 15 gm. of brain tissue to 30 cc. of sterile salt solution. Murphy reported a case in which an excellent result was obtained by the use of a morphin-eucain solution injected into the spinal canal.

Recently magnesium sulphate has been advocated for the treatment of this disease. Miller, of Johns Hopkins, reviews the cases reported to date in the December number of the *American Journal of the Medical Sciences* and draws the following conclusions: "There are thus far fourteen cases on record treated with magnesium sulphate. Of eleven of these cases, treated by subarachnoid injection, five have recovered, a mortality of 55 per cent. This result is encouraging inasmuch as almost all the cases in this series were of the type of tetanus which usually proves fatal. Three cases were treated by infusion, none of them of severe type, and there were three recoveries. In conclusion, it may be affirmed that by the use of magnesium sulphate it is possible to achieve complete muscular relaxation in almost all cases of tetanus; from the report of results there seems to be a distinct benefit to the patient in this condition, inasmuch as it prevents the rapid exhaustion due to convulsions and in most instances has made it possible for the patient to take nourishment. It may likewise be affirmed that, while as yet there is comparatively little evidence upon which to base general statements, yet it seems possible to avoid the dangerous effects of an overdose of magnesium salts, and it is likely that when the technic has been thoroughly worked out, the treatment will offer a possibility of saving a great many lives of patients with tetanus who at the present time are given up as hopeless at first sight." From 3-6 cc. of a 25 per cent. solution was given in most of these cases.

This concludes the list of specific remedies. To counteract the effect of the toxins upon the cells already affected and control the convulsions, the following drugs are most satisfactory. Chloroform in very severe convulsions to relax the spasm of the muscles; chloral and the bromides for internal administration, which should be given in large doses, as chloral, gr. 15, every four hours, or every two, if necessary, and some writers advise combining the bromides with the chloral. Others use bromides alone. Personally we advocate the 15 gr. doses of chloral every four hours, increased to every two, if necessary. Stimulation, preferably with whisky, as indicated. Liquid diet and seclusion from all sources of irritation are a necessary part of the treatment.

RECAPITULATION

1. Freely open and cleanse all punctured and 4th of July wounds. Use tetanus antitoxin in all suspicious punctured and all 4th of July wounds.

2. Inject antitoxin and also use a 25 per cent. solution of magneseium sulphate,* preferably by injection into the spinal canal, in all cases.

3. If these means do not secure amelioration of the symptoms, use Bacelli's carbolic acid injections.

4. Give large doses of chloral to relieve the symptoms if they do not subside when the magnesium sulphate is given.

5. Stimulate the patient as indicated and shut out all external *stimuli to nervous excitation.*

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*Blake advises 1 cc. of a 25 per cent. solution of magnesium sulphate to each 25 lbs. of body weight.

INDUSTRIAL EYE NJURIES.*

By Wilson Johnston, M. D.,

SPOKANE, WASH.

The industries tributary to a city determine to a great extent the character of the injuries seen by the physician residing there. The injuries referred to in this paper come from a territory whose chief industries are agriculture, lumbering and mining. They may be divided into four classes:

I. Those occurring as the result of handling high explosives in mining and railroad costruction.

II. Those occurring from the bursting of locomotive oil and water gauges.

III. Those occurring in mills, foundries, machine shops and the building trades.

IV. Those occurring in the agricultural pursuits.

Class I. In mining and railroad construction, high explosives or substances which cannot, like gunpowder, be exploded by simple ignition, but which require an exploder in producing their complete detonation, are almost universally used. Deteriorated powder, poor fuse or improper loading result in premature blasts and mis-fires. Where the initial detonation is not strong enough to go through the entire charge, only a portion of it is exploded and the balance is either left in the hole or scattered about the workings in the debris. The majority of accidents occur from drilling into these "missed holes," or from striking a piece of powder with a pick or shovel in removing the debris. A small percentage of accidents are due to the exploding of the copper detonators or caps.

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*Read before the Washington State Medical Association, Walla Walla, Wash., Sept. 9-11, 1908.

The force producing injuries of this class is so great that extensive laceration and destruction of the ocular structures by contusion or perforation is the rule. Severe intra-ocular hemorrhage, with injury of the retina and chorioid, may occur where there is no penetrating wound of the external coats. In many cases, the cornea, while not perforated, is peppered with fine particles to such an extent that the vision is partially or completely lost on account of scar formation.

Of the injuries resulting from 35 blast accidents seen in our office in the last two years, 20 were of both eyes. Of these, five resulted in complete blindness. In five others, one eye was lost and there was a traumatic cataract of the other. Four of these cataracts were successfully needled and one remains unoperated. In five cases it was necessary to enucleate one eye. The remaining five cases were injuries to the corneas of minor degree.

Of the fifteen in which only one eye was injured, enucleation was necessary in six. In four, the iris was prolapsed and the lens cataractous. Five were injuries of the cornea, two of which resulted in large leucomas.

Class II. Injuries of this class occur among locomotive engineers, firemen and wipers. The vibration of the engine subjects that portion of the glass of water and oil gauges which is inserted into the metal caps or holders to constant friction. This causes an inequality in the thickness of the glass and renders it unable to withstand the required pressure of 200 pounds to the square inch. In water gauges, the friction of the water alone is sufficient to wear little seams in the glass and renders it unsafe. This is well demonstrated in the specimens exhibited, one of which was in service seven and the other ten days. While medical literature, as noted by Conkey (*Ophthalmic Record,* May, 1905), contains little pertaining to injuries of this class, I cannot believe they are uncommon.

Of 297 eye injuries noted on our records as occurring to railroad employees, 19 were of this class. In no case were both eyes injured. Enucleation was necessary but once. In two cases there was traumatic cataract. In two, wounds of the cornea and prolapse of the iris. In three cases there were central wounds of the cornea, which resulted in impaired vision. In four, the cornea was wounded near its periphery and vision was unaffected. In four cases the conjunctive and Tenon's capsule were wounded extensively enough to require several sutures. Two were cases of simple contusion, with subconjunctival hemorrhage.

Class III. The greatest number of injuries are in this class. The majority are wounds of the cornea by particles of steel, emery, sand, etc. Severe injuries are caused by pieces of wood or iron which have been hurled from rapidly revolving machinery, such as circular saws and lathes. A large proportion of penetrating wounds of the globes from iron and steel occurs among men employed in mills, foundries and machine shops. Burns from lime are by no means uncommon. In the past six months, three cases of extensive injury of the cornea have been seen which were caused by masses of cement that fell from buildings under construction.

Class IV. Injuries of this class differ from those of the preceding classes in that the majority are produced by vegetable substances, as straw, beards of wheat, etc., and a greater percentage are infected.

With good artificial illumination, a lens or a loupe, the diagnosis of non-penetrating injuries of the conjunctiva and cornea is a simple matter. The same is true of the severe injuries of the globe where there is a lacerated wound, loss of perception of light, edema of the conjunctiva and lids. When the injury is not severe and the foreign body has caused a wound of the cornea or sclera, the physician must determine whether or not the object is within the globe. If the object is small and it is in the anterior structures of the eyeball, it may be seen with the aid of the ophthalmoscope. When it is in the vitreous and has injured the internal structures to any extent, the media are clouded and recourse must be had to the electro-magnet or the Röntgen rays. Opinions differ as to the wisdom of using the magnet for diagnostic purposes. We use it at the wound of entrance in all recent cases where the penetrating body is supposed to be steel. Failure to elicit pain must not be regarded as positive evidence that there is no steel in the globe. The most positive means of diagnosis is the Röntgen rays. With the aid of localizers, the radiograph shows not only the foreign body, but its size and position in relation to the eyeball. In all doubtful cases a radiograph should be made.

In penetrating wounds of the eyeball the prognosis depends on the substance producing the injury. In classes I. and II. the foreign body is usually copper, stone or glass. The removal of these non-magnetic bodies requires the use of forceps and, unless located in the anterior portion of the globe, is attended with difficulty and small chance of success. A greater percentage of eyes are lost than in class III., where the penetrating injuries are usually due to steel or iron. In the non-penetrating wounds of classes III. and IV., impairment of vision and loss of the eye is due to infection.

Injuries of both eyes in which there is either temporary or permanent loss of vision may destroy the reason. Five of the twenty cases developed mental symptoms. In two patients acute mania occurred, which was so violent that it was necessary to commit them to the State Hospital for the Insane. One of them died and the other gradually improved as the traumatic cataract became absorbed, but complete recovery only took place after needling of the capsule and the restoration of fair vision. In another case the patient became highly nervous, wakeful, irritable and unreasonably suspicious of his best friends. In the remaining two there was extreme melancholia, with a desire for death. They refused medicine, food, drink and accused the doctors and attendants of trying to poison them. Improvement of the mental condition occurred as soon as a little vision was restored.

Considering these accidents from an economic standpoint, we find that those of class I. not only destroy the earning capacity of the individual, but also throw him on the community for support. Accidents of class II. affect men whose occupation demands a high visual acuity and impairment of the vision of one eye reduces his earning capacity at least fifty per cent. By rendering the engineer incapable of performing his duties, these accidents, at the time of their occurrence endanger also many lives and much valuable property. Injuries of classes III. and IV., as a rule, affect the earning capacity but little. The artisan or farmer soon learns to accommodate himself to the loss of one eye and is able to accomplish the same work as before.

Injuries affecting one-eyed persons are regarded as rare by Magnus and Würdemann. Two cases have occurred in our practice in the past year. One of the patients lost an eye in childhood and a few months ago received an injury which reduced his vision to 4-20. The other man, as a result of a blast, had a traumatic cataract and prolapse of the iris of the left eye. Six weeks later he was again the victim of a blast accident and the eyes were injured so that he is now hopelessly blind.

The majority of these injuries are preventable and I would advocate: (1) Government inspection of the manufacture of all explosives. (2) Licensing of "powder men." (3) Protection of water and oil gauges by wire or plate glass screens. (4) The placing of guards on all emery wheels, lathes, etc. (5) Education of the laity as to the seriousness of even slight injuries when infected.

In all eye injuries, the object should be to prevent infection. Too much stress cannot be placed upon the importance of the thorough cleansing of the field at the first dressing. With a clean field, the treatment will depend on the indications. Where the eye is lost, enucleation is the only operation considered, the preference being for the suture operation, after the method of Priestly Smith.

When a foreign body has been localized with the aid of a radiograph, its extraction should be attempted through an incision of the sclera with the magnet or forceps. If seen soon after injury and the unwounded iris has prolapsed through a wound of the cornea which does not extend to or into the ciliary region, it should be replaced, a few drops of eserin solution instilled and the eye bandaged. If the iris is wounded, or the corneal injury extends into the ciliary region, the prolapsed portion should be amputated. When seen forty-eight to fifty hours after injury and there is no evidence of infection, open the wound, relieve the incarcerated portion and amputate. If infection has taken place, cauterize with the actual cautery, instill atropin solution and use hot water applications. In the removal of foreign bodies from the cornea, have perfect illumination and use a sharp, fine-pointed instrument.

In conclusion, I would urge the members of this society to use every means for the enactment of laws which will regulate our industries and tend to safeguard the lives of our workmen.

FRACTURE OF THE GREATER TUBEROSITY COMPLICATING DISLOCATION OF THE SHOULDER.*

By BERNARD HAHN, M. D.

SEATTLE, WASH.

The shoulder joint has always been recognized as a *crux medicorum.* Even apparently insignificant trumatisms too frequently lead to important functional disturbances which prove refractory to treatment. The shoulder is the most sensitive articulation of the human body and, in this respect, surpasses the knee joint. Even as the "derangement interne" had to serve as an explanation of all kinds of obscure conditions in the knee joint, so have we in shoulder lesions resorted to mysterious explanations and have been quick with vague expressions, such as trophic disturbances, deltoid paralysis, etc.; and as with the knee joint it has been the Röntgen rays which have cleared up many an obscure lesion and helped to definitely do away with the "derangement interne," they have also proven a valuable agent in giving us a clearer insight in shoulder affections.

The two cases which I shall cite may serve as examples to demonstrate a shoulder lesion which is not infrequent, but still not sufficiently known or taken into account. With this I do not intend to say that there are no serious disturbances of the functions of the shoulder without any great anatomic alterations. This applies in particular to the dislocations. Contrary to the current opinion, even the simple, in no way complicated dislocations of the shoulder, give a very doubtful prognosis.

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*Read before the King County Medical Society, Seattle, Wash., Feb. 1, 1909.

In the Breslau surgical clinic investigations have recently been made as to the present condition of all cases of simple shoulder dislocation treated at that institution during the last five years. It was shown that only in 13 per cent. of all these uncomplicated dislocations there was a perfect result, while in 65 per cent. it was not satisfactory, and in 46 per cent. the elevation of the arm in straight abduction remained below the horizontal line. The author of these statistics considers cicatrization and shrinking processes in the capsule and in the surrounding soft parts as the main causes for these more or less serious disturbances which, even by early massage and movements, only rarely can be avoided. With all this, what I want to point out is the fact that a conscientious examination and in first place the employment of an improved Röntgen technic will very often uncover complications which, for themselves, explain an imperfect result.

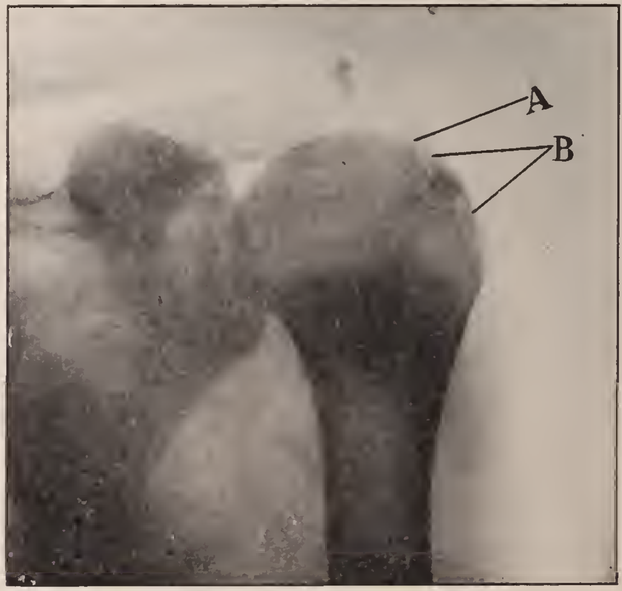


Fig. 1. A. Particle of Bone Broken Off. B. Impacted Fracture.

Case 1. Mr. W. J., twenty-nine years of age, in walking on a narrow board sidewalk, stumbled and fell, striking with his right shoulder against the ground. He was unable to move his arm, went to the nearest physician, who made the statement that there was a dislocation of the shoulder with the head in the axilla. He made several unsuccessful attempts to reduce it. The reduction, however, was made the following day under anesthesia. A Röntgen ray examination (with the flouroscope only, as I later found out) was made at the time and the patient informed that everything was all right. His arm was put in a sling. As, in a few days, he was unable to lift or use his arm, he consulted me as his family physician. Active and passive abduction and outward rotation were painful and limited to a few degrees. The most prominent part of the shoulder, just below the acromion, was somewhat thickened and rather tender. I applied massage and, after a while, cautious passive movements. The case proved to be rebellious and I thought I had to deal with one of those above named numerous cases of shrinking of the capsule, etc.

However, when, after a few weeks treatment, there was no apparent improvement, I insisted upon having a Röntgen picture taken (Fig. 1). It clearly shows a fracture of the greater tuberosity, the fragment (B) being wedge-shaped and impacted, while the very small particle (A) of bone is broken off. The fracture exactly corresponds with the location of the tender spot. Whether it is solely responsible for the unsatisfactory result of the treatment or whether possible changes in the capsule, etc., are contributory, seems difficult to decide. Whether, if the fracture had been early diagnosed, the treatment would have been different and whether this would have made any difference in the final result, may also remain an unsettled question. Immobilization for a limited time might be indicated in this class of cases. At the present date, three and a half months after the accident, the patient is not able to lift, in the sense of abduction, his arm up to the horizontal, even with extreme motion of the scapula.

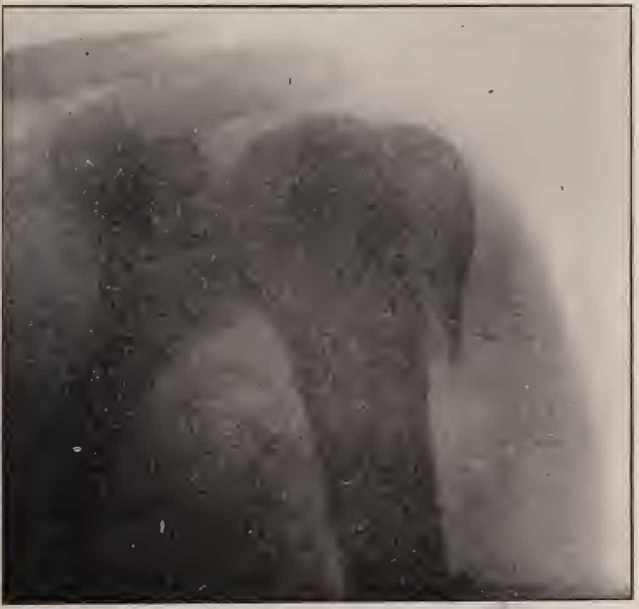


Fig. 2. Fracture of Greater Tuberosity.

CASE 2. (For which I am indebted to the kindness of Dr.

P. W. Willis). Mr. C. W. M., forty-six years of age, fell February 23, upon his left side, striking the ground with the inside of his elbow, the arm probably being forced into hyperabduction. Kind of dislocation unknown. It was reduced under anesthesia by another surgeon; no Röntgen picture taken at that time. The arm was put in a sling and the patient was told he would be all right in a week or so. Sixteen days after the accident, still suffering pains and tenderness in his shoulder and being unable to raise his arm, the man consulted Dr. Willis. A Röntgen picture was taken, March 13, showing a fracture of the greater tuberosity (Fig. 2). The patient has since then improved very little. He is able to lift his arm in the forward direction only to a very limited extent and, in the sense of abduction, not to the horizontal.

Comparing the two cases, we have in both a very marked tenderness below the acromion just on the site of the tuberosity. This seems to be a most important symptom for the diagnosis. Otherwise the difference in the two cases is striking. Case 1 was a fracture by direct trumatism (fall upon the tuberosity itself), with a small compressed or impacted fragment; in Case 2 was an indirect fracture with a large and somewhat displaced fragment. This second would probably have been a suitable case for bloody intervention after Kocher (suturing or nailing the fragment to the humerus).

Keen reports (*Annals of Surgery*, June, 1906) a case of dislocation of shoulder with fracture of the greater tuberosity, where he successfully nailed the fragment through the deltoid muscle. Fracture of the tuberosity is only one of the numerous complications which we may find in shoulder dislocations, and that this is not an infrequent one, is shown by statistics from the Cologne City Hospital, where the tuberosity fractures made up two per cent. of all fractures.

That in both our cases the proper diagnosis was not made is due to the fact that no Röntgen examination was made or at least not in a proper way (by flouroscope only). A very marked and lasting tenderness below the acromion should always put us on our guard against a possible fracture in this place. If we take into consideration that some men hold there is no such thing as an uncomplicated shoulder dislocation at all, (which, of course, I do not hesitate in declaring a hyperbole) and if we are aware of the fact that every shoulder dislocation is a serious injury,* then it is certainly our duty to pay the closest attention to injuries of this kind, to hunt for symptoms of possible cimplications and, first of all, to take a good Röntgen picture before and after the reduction. To use the Röntgen rays only where there is a suspicion of fracture I would consider a great error.

*I was told by a U. S. Army surgeon that any man who was afflicted with a shoulder dislocation is *eo ipso* considered as disabled for regular service for the next eighteen months.

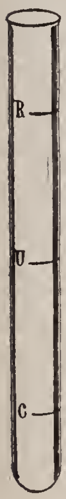
THREE IMPORTANT TIME SAVING URINARY TESTS.

By Henry R. Harrower, M. D.

CHICAGO, ILL.

Since the importance of the examination of the urine is becoming more and more appreciated and as therapeutics depend, at least to a considerable extent, upon the laboratory report, anything which will help the busy doctor to ascertain definite facts regarding his patients and their condition will undoubtedly be welcome to the average general practitioner. Three simple little instruments are described in this paper, all of which are designed to supplant more cumbersome while no less accurate methods, at the same time permitting the busy doctor to make careful, accurate tests *quickly*, the time element being the important point.

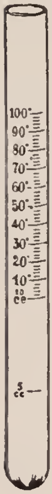
Of course microscopic and bacteriologic examinations can only be made by experienced laboratory men or by physicians versed in this branch of medicine, but there are certain important findings, having exceedingly valuable bearings upon treatment, that should be very much more frequently done by the rank and file of the profession.



The Indican Test. The estimation of indican is of great importance in the discovery and treatment of intestinal autointoxication and the many ills resultant from it. It serves as a reliable index of the condition of the bowel and should be carried out in the investigation of every case, no matter what may be the trouble. It will be surprising to note how many individuals calling for the treatment of certain skin, nervous or other special diseases are suffering from serious toxic conditions, and can only be successfully treated if this essential factor is taken into consideration. The test for indican has become the sign of the indication for which treatment is made.

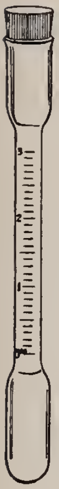
The accurate estimation of indican in the urine is a very tedious and difficult procedure, and is, therefore, out of the question in the work of the general practitioner. In my practice I make use of a very simple instrument which permits of definite comparative tests. This consists of a glass tube, graduated as in the accompany sketch, so that five cc. each of urine and the reagent may be mixed with 2 cc. of chloroform. The procedure is as follows: The tube is filled to the mark C with commercial chloroform, urine is then added to the mark U and Obermayer's reagent (a 2 *pro mille* solution of ferric chloride in concentrated HCl) to the mark R. If Obermayer's reagent is not at hand use concentrated hydrochloric acid, and add five or ten drops of hydrogen peroxide. The tube is then closed with the thumb, vigorously shaken for a few seconds and the chloroform allowed to settle. The blue color due to the indigo blue (from the oxidized indican present) may be judged as zero, trace, large trace or much. It is admitted that this is a very simple procedure, but the use of the above tube materially assists in making more definite *comparative* tests.

The Urinary Acidity. The estimation of the urinary acidity has been demonstrated by Dr. Eugene S. Talbot, of Chicago, and other prominent men to be a reliable guide in the successful treatment of acid autointoxication, not necessarily of intestinal origin. It has been proven that a high urinary acidity is inevitably accompanied by more or less serious disturbances. In fact, it is entirely possible that this condition may be the precursor of many hitherto unexplainable functional and organic diseases, which, fully established, are of a most grave character. The treatment of these conditions is a matter of much importance and in order to carry it out scientifically and definitely, frequent examinations of the acidity of twenty-four hour specimens of urine should always be made. In order to simplify the technic of this test I have designed an acidimeter which consists of a glass tube so graduated that ten cc. is the first measuring point. From this upward the tube is graduated in fifths of a degree to one hundred degrees, each degree representing the amount of decinormal sodium hydroxide solution required to exactly neutralize one hundred cubic centimeters of urine.



The test is carried out as follows: Fill the tube with the specimen of urine until the lower edge of the meniscus is just on the 10 cc. mark. Two drops of phenolphthalein indicator solution are added, and then with an ordinary medicine dropper the decinormal sodium hydroxide solution is added. The tube is inverted after the addition of each few drops until the color of the fluid has just been changed from yellow to a light rose pink. The normal, urinary acidity of a mixed twenty-four hour specimen should vary between thirty to forty degrees. With very concentrated urine, in which the acidity is above one hundred degrees, the tube may be filled to the 5 cc. mark and with water to the usual level, the resulting figures being, of course, doubled.

The Albumin Test. It is scarcely necessary to emphasize the importance of ascertaining, not only whether albumin is present in the urine, but if so of finding out the amount present and fluctuations from day to day. The importance of this test is obvious to all, but just how to make it easily and accurately is the problem. The Esbach method is inaccurate, and takes twenty-four hours. The Purdy method is by no means accurate as it might be, and requires the use of a centrifuge, whilst the use the albuminometer here described permits of an accurate test in less than two minutes.



The albuminometer consists of a glass tube, similar to the accompanying illustration, and so arranged that the bulb at the lower end contains slightly less than 5 cc. The 5 cc. mark is accurately made on the narrow portion of the tube, which from this point is graduated in tenths of a cubic centimeter for 3 cc.; the end is made large to permit of easy filling. The tube is filled to the 5 cc. mark with a solution containing phosphotungstic acid, 1.5 gm.; concentrated hydrochloric acid, 5 cc. and alcohol (95 per cent.) to make 100 cc.. (This reagent was described by Drs. E. H. Goodman and Suzanne Stern in the *Journal of the American Medical Association* July 4, 1908.)

Having previously diluted the specimen of urine, the dilution is added drop by drop until a faint white cloud appears. The reaction is now complete and the amount of diluted urine added is read off on the scale. This corresponds to the amount that contains one-tenth of a milligram of albumin. The amount in one hundred cubic centimeters or in a twenty-four hour specimen may be easily found. A table showing the calculations for one in two, one in five, one in ten, one in twenty and one in fifty has been made which saves considerable calculation.

The advantages of these three tests may be summed up as follows: First: The time required to perform the tests is reduced to a minimum. Second: They are at least as accurate as any other test, and possibly even more accurate. Third: The expense is less than that of the instruments previously required for the tests. Fourth: The tests are so simple that they can be carried out by almost any one with little or no trouble.

It is to be hoped that these instruments, the only claim for which is the simplicity and rapidity made possible by their use, will simplify the present laboratory facilities of the general practitioner, thus stimulating him to make more frequent use of the urine examination, and thereby increasing his diagnostic capabilities and his professional success.

905 Chicago Savings Bank Building.

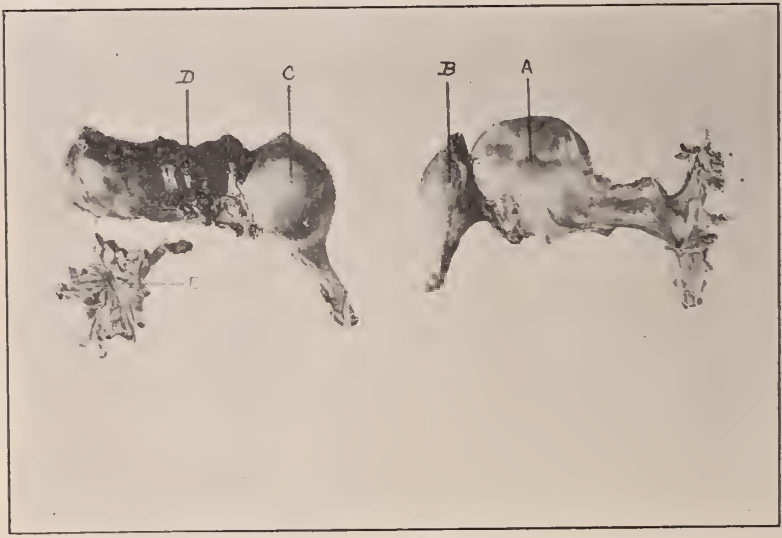
CLINICAL REPORT.

DOUBLE UTERUS AND ABSENCE OF VAGINA.

By S. F. WILTSIE, M. D.
Seattle, Wash.

L. A., aged 17. Family history negative. Personal history: Last January had pain in the pelvic area, bearing down in character and lasting three days; there was also a throbbing headache, confined to the occipital region, which continued intermittently for the same length of time. At the end of about four weeks she complained of the same symptoms, together with the spitting of some blood and slight nose bleed. Each succeeding month the condition was aggravated, the headache more severe and the hemorrhage from the nose quite profuse.

On examination by Dr. Horton the external genitals showed no vaginal orifice, although they were otherwise perfectly formed, except the lower wall of the urethra was longer than that of the upper wall. No trace of vaginal opening could be detected by probe and, on opening into the space between the rectum and bladder, no vagina could be detected. There was, however, following the first cut of the knife, a slight flow of milky fluid, but no passage or duct containing this was discovered. Examination by rectum showed both ovaries present, but the uterus was not felt.



A. Fundus of Right Uterus. B. Diverticulum. C. Fundus of Left Uterus. D. Cervix of Left Uterus. E. Fimbriated End of Left Tube.

After the abdomen was opened, the following condition was disclosed. On the right side there was a mass of uterine tissue about the size of a plum, from the top of which extended a diverticulum about two inches long; this was walled off and full of fluid. The tube extending from its cornu and the round ligament was normally placed but double its normal size. Both passed off through the right broad ligament as they normally should. The left side of this mass was entirely free. The uterine artery was in normal relation to what appeared to be the cervix. Extending down to and across the top of the bladder was a narrow band of muscular tissue. This united a small uterus, size of a large olive, on the left to that of the right. Extending off from this, the tube and round ligament in size and relation were normal. This mass was accompanied by the uterine artery on the left. The right ovary was normal in size and color, but contained one small cyst. The left was enlarged and full of cysts. Both masses with both tubes and left ovary were removed.

ARMY MEDICAL CORPS EXAMINATIONS.

Preliminary examinations for appointment of first lieutenants in the Medical Corps of the army will be held July 12, at designated points. Full information can be procured on writing to the Surgeon General, U. S. Army, Washington, D. C. Applications for examination must be complete and in possession of the Adjutant General on or before June 10. At present there are 103 vacancies in the Medical Corps. Salary for first lieutenant is $2,000, with increase at promotion to higher grades. Other provisions and privileges add about $1,200 to first lieutenant's salary and proportional additions to other grades. Opportunity is given for a variety of medical and surgical work beside engaging in special research and investigations.

ATROPIN AS A HEMOSTATIC.

Dr. Wm. F. Waugh is collecting material for a paper on atropin as a hemostatic and will gratefully receive notes from any who have had experience with this use of the drug, being especially anxious for advance reports. His address is 1424 E. Ravenswood Park, Chicago, Ill.

NORTHWEST MEDICINE

THE JOURNAL
of the
WASHINGTON STATE MEDICAL ASSOCIATION.
Publication Committee: C. H. Thomson, M. D.; C. W. Sharples, M. D.;
L. H. Redon, M. D.

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Published Monthly by the Washington Medical Library Association.

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Editorial and Business Office - Marion Building, Seattle, Wash.

Subscription Price, $2.50 per annum in advance. Single Copies, 25 Cents.
Foreign Countries, $3.00 per annum.

Entered March 14, 1903, at Seattle, Wash., as Second Class Matter, under
Act of Congress of March 3, 1879.

VOL. VII. MAY, 1909. NO. 5

THE PROGRAM FOR THE JULY MEETING.

We had hoped in this issue to publish a preliminary program, giving in substance the papers and other features of the meeting for July 20-23 in Seattle. Owing to the failure to receive some data we are able to present only a partial program but sufficient to give a general view of what is contemplated.

Dr. James B. Herrick, of Chicago, Professor of Medicine at Rush Medical College, will deliver an address on "General Infection and Metastatic Lesions due to the Gonococcus." This will not deal with the venereal aspect nor primary local lesion of the disease. He will also be heard on other occasions. Dr. Roswell Park, of Buffalo, will deliver an address on "The Relations of Internal Secretions to Surgical Diseases." He will also participate in other parts of the program.

Papers presented by members of the four associations will be divided into the four sections of medicine, surgery, ophthalmology and genito-urinary. Returns from the writers are not yet complete but the following have been received at this time. Significance of Pain in Women, W. C. Smith, Salem, Ore. Epileptoid Conditions, W. T. Williamson, Portland. The Comparative Frequency of Nephritis in the Pacific Northwest, E. B. Pickel, Medford, Ore. Flexner's Antimeningitis Serum, P. V. von Phul and G. B. McCulloch, Seattle. The Manner of Action of Various Diuretics, J.

B. Brown, Tacoma. Eclampsia, F. R. Hedges, Everett, Wash. The Treatment of Fever, C. N. Suttner, Walla Walla. Early Diagnosis of Chronic Nephritis, N. M. Baker, Spokane. Early Diagnosis of Pulmonary Tuberculosis by Means of the X-ray, H. R. Nelson, Victoria. Alcohol. Its Uses in Health and Disease, A. R. Proctor, Vancouver, B. C. Do Protozoa Infections Exist in British Columbia? B. D. Gillies, Vancouver, B. C. Etiology of Gall-bladder Infections, J. E. Else, Pullman, Wash. Constipation and Excision of the Colon, C. W. Sharples, Seattle. Conservatism in Surgery, H. B. Luhn, Spokane. Surgical Diagnosis of Abdominal Diseases in the Child, W. D. Kirkpatrick, Bellingham. The General Treatment of Wounds, E. F. Tucker, Portland. Observations on the Diagnosis and Treatment of Fractures, L. H. Hamilton, Portland. The Treatment of Exophthalmic Goitre, A. C. Smith, Portland. Functional Results Following Resection of the Sciatic Nerve, K. A. J. Mackenzie, Portland. Interesting Cases of Injuries to Knee and Ankle Joints, O. M. Jones, Victoria. A Report of Gangrene of the Ischiorectal Fossae Caused by Spirillum, A. S. Monroe, Vancouver, B. C. Incidence of Echinococcus Disease in British Columbia, R. E. Mackechnie, Vancouver, B. C. How Shall We Treat the Advanced Cases of Carcinoma of the Uterine Cervix, J. W. Bean, Tacoma. Deleterious Effects of Nasal Disease in Affections of the Eyes, F. W. Hilscher, Spokane. Ophthalmoplegic Migraine, Involving the Abducens Nerve, with Report of a Case, C. A. Veasey, Spokane. Conjunctivitis Resembling Parineaud's with Cases, N. H. Goodenow, North Yakima. Expression of Cataract in the Capsule, with Exhibition of Specimens and Cases, H. V. Würdemann, Seattle. Blindness Following Hemorrhage, H. Stillson, Seattle. Malignant Tumors of the Bladder, with Report of Cases, G. McGowan, Los Angeles. Intra-vesical Operations with the Aid of Cystoscope, Henry Meyer, San Francisco. Pathology of Tumors of the Bladder, R. V. Dolby, Vancouver, B. C. Observations on the Treatment of Epididymitis, J. Gibbs, Vancouver, B. C. Tuberculosis of the Kidney, G. S. Peterkin, Seattle. Penetrating Wounds of the Eyeball, P. B. Wing, Tacoma. Extirpation of the Lachrymal Sac, Don Campbell, Vancouver, B. C.

The program will be arranged for one session daily, for each section, which will occupy the morning. But on the first day there will be a general meeting in the afternoon which will include the addresses of the Eastern visitors. On one afternoon there will also be a session devoted to tuberculosis, under the direction of the Washington Association for the Prevention and Relief of Tuberculosis.

One evening will also be devoted to a session of Public Health, under the auspices of the Pacific Coast Public Health Association, of which Dr. N. K. Foster, of San Francisco, is president. It is not possible at present to announce the paperss for the latter two sessions but they will be presented by able writers who will offer something of interest and profit.

The afternoon and evening of the second day will be devoted to entertainment at the A.-Y.-P. Exposition. Provision will be made for musical, social and other forms of entertainment that will aim to bring together the visitors in a pleasant manner. It is also contemplated to provide an afternoon excursion to the Puget Sound Navy Yard. The meeting will be held at the Broadway High School, where abundant provision is at hand for all necessary rooms under one roof. During the four days of the meeting the downtown headquarters will be at the medical library, in the Central building, where adequate provision will be made for the needs of visitors and local members.

MEMBERSHIP IN THE STATE ASSOCIATION.

Attention should be called to its members, by the officers of each county society, that membership in his society, and also in the state association, depends on the payment of annual dues. The Secretary of the state association finds at this time that the membership in the association is small by reason of so many having neglected to pay their dues, which come to him through the county secretaries. Complaints are constantly reaching us from those who suppose themselves members that they do not receive Northwest Medicine, which is due them. The explanation often is that they do not appear on the records as members because they have neglected to keep in good standing by paying the annual dues. The only source of information in this matter for the State Secretary is through the data sent him by the county secretaries. This failure is rarely intentional but is the result of carelessness. An energetic secretary can accomplish much in this line by persistently pursuing delinquent members until they have responded. Nothing is gained by delaying long after the first of the year. In order to preserve a strong and united body of physicians in the state we need to have all eligible members in the ranks of the state association and, when they are once members, it is essential to hold them together.

THE HOUSE OF DELEGATES.

The policy adopted by the Washington Association is to refer all matters of business, during the annual meeting, to the House of Delegates, which alone has authority to enact legislation. Therefore, the necessity is apparent that each component society should elect delegates who will attend the meeting so that each society may be represented in all the deliberations. As this annual meeting of delegates is for the benefit of the physicians in all parts of the state, it is desired that any society should be prepared to present before it matters that may be deemed of sufficient importance for general consideration. Therefore, the delegates are requested to keep this meeting in mind and come prepared to act with deliberation and forethought.

THE A. M. A. MEETING NEXT MONTH.

The program for the A. M. A. meeting at Atlantic City next month is an especially good one and presents many attractive features for those who will be fortunate enough to attend. At every annual meeting of this national organization there are present a few representatives from Washington, though our great distance from the Atlantic seaboard precludes the attendance of as large a delegation as our numbers might warrant. One who has never been present at an Atlantic City session cannot appreciate the inspiration from a gathering of so large a body of physicians as assembles at that great convention city every second year. The best that the Association can present is there offered for the instruction and enjoyment of the profession of the land. The interests of the Washington Association will be well cared for by our delegate, Dr. J. R. Yocom, who has been identified with its activities for many years.

PHYSICIANS AT THE A.-Y.-P. EXPOSITION.

It is anticipated that many physicians will visit the exposition during the four and a half months that it will be open, coming from many parts of the country. The management desires to announce to the profession of the land that it has established a well equipped emergency hospital on the grounds, at which a physician and nurses will be in constant attendance. It is planned to make this a medical headquarters during the summer for all physicians visiting the exposition. If so desired, mail can be addressed there and it can be made a convenience while on the grounds, for the use of telephones, resting and similar purposes.

MEDICAL NOTES.

The State Commissioner of Health. In accordance with the provisions of the law passed by the last legislature, the state board of health has appointed Elmer E. Heg, secretary of the board, commissioner of health. He is to be paid sufficient salary to warrant his devoting his time to state sanitary work and his authority is greatly increased, so that he can investigate and abate all conditions threatening the health of the state. He has supervision over the work of city and county boards of health. The headquarters of the commissioner will be in the Burke building, Seattle, where adequate facilities have been provided for all the work of the board.

Laboratory of the State Board of Health. Dr. Rose A. Bebb, bacteriologist to the board for the past five years, has resigned. Dr. E. P. Fick has been appointed in charge of the laboratory. He is an experienced bacteriologist and physiologic chemist, who has devoted much time to this kind of work in the past. He has practised in Seattle for four years. The laboratory has been newly equipped with all necessary appliances for its work and Dr. Fick will be prepared to perform all bacteriologic work received by him, beside that of the state board of health.

The Tuberculosis Agitation in Seattle. The King County Antituberculosis League stirred up a hornet's nest when it attempted to establish a tuberculosis tent colony on a forty acre tract in Seattle which was offered for temporary use for this purpose. Although the tents would be far removed from the houses, which are sparsely located in that part of the city, the neighboring residents rose en masse and inaugurated an active warfare against the movement. They maintained many false and imaginary theories of contagion and disaster that would attack that section. The protestants were sufficiently insistent to stampede the city council into passing an ordinance prohibiting the establishing within the city limits of institutions for the treatment of any contagious diseases. The mayor saw light and retained his mental poise, as demonstrated by his veto of this measure. The inconsistency of the opposing movement is shown in that no objection is raised to collections of individual tents in private yards or tubercular patients on porches, however close to other residences. It is evident the public needs farther instruction as to infection from tuberculosis.

Eradication of Plague From San Francisco. The volume, with this title, published by Citizens' Health Committee, presents an interesting and instructive narrative of the work of exterminating the rats of the city, the essential faction in eradicating the plague. There is a history of the fight, carried on for a long period before the solution of the problem was seriously undertaken, with an account of the final victory of the forces striving for publicity and concerted action. Next to the extermination of rats was found the importance of wholesale destruction of fleas which have been reduced to a minimum in San Francisco. Nowhere is the lesson of the great expenditure of effort and money more applicable than to the cities of Puget Sound, any one of which may duplicate the experience here described unless protected by the active results of eternal vigilance and constant warfare on the rat. The work of the Marine Hospital service stands out in striking prominence in this volume, without which the final results could not have been attained.

State Medical Examining Board. Governor Hay, by the requirements of the new medical act, has the appointment of an entirely new medical examining board. It is to consist of nine members, five being of the regular school, two homeopaths and two osteopaths. Thus far he has announced the appointment of seven of this number as follows: I. P. Witter, of Spokane; E. J. Taggert, of Bremerton; A. M. Smith, of Bellingham; H. R. Keylor, of Walla Walla, to represent the regular school. E. W. Young, of Seattle, will be one of the homeopathic members. W. T. Thomas, of Tacoma, and J. C. McFadden, of Seattle, will represent the osteopaths.

The Washington State Homeopathic Medical Association. This organization has been formed with thirty-five members. The following officers were elected: President, E. W. Young, Seattle; vice-presidents, Chas. Grove, Spokane, and W. E. Russell, Walla Walla; secretary, G. W. Beeler, Seattle; treasurer, S. R. Boynton, Bellingham.

New Hospital at Vancouver. The Sisters of Charity of Providence will build a new hospital at Vancouver, Wash., to cost $25,000, with capacity for 100 patients, to be completed Jan. 1. It will be a five-story stone and brick building, with modern appliances and equipment. The first hospital built in the Northwest, St. Joseph's, was constructed in Vancouver, in 1858, and is still in daily use.

Tacoma Hospital for Contagious Diseases. Pierce county will erect several temporary buildings for treatment of contagious diseases at the county hospital grounds on Pacific Avenue, Tacoma. This will be in accordance with the treatment of such cases in Eastern cities.

A New Bacteriologist for Tacoma. Dr. C. S. Wilson, for some time bacteriologist for Tacoma, has resigned and Mayor Linck has appointed Dr. James La Gasa to this office.

REPORTS OF SOCIETY MEETINGS.

CHEHALIS COUNTY MEDICAL SOCIETY.

President, G. E. Chamberlain, M. D.; Secretary, C. E. Bartlett, M. D.

The Chehalis County Medical Society held its monthly meeting at Hoquiam, April 6, followed by a banquet.

The following papers were read:

Therapeutics, Rational vs. Emperical, by Dr. Schumacher. This was discussed by H. C. Watkins.

Tubercular Peritonitis, by A. J. McIntyre, which was discussed by A. S. Austin.

Treatment of Gunshot Wounds, by O. R. Austin. This was discussed by Dr. McDonald.

CLARKE COUNTY MEDICAL SOCIETY.

President, E. F. Hixon, M. D.; Secretary, J. D. Scanlon, M. D.

The Clarke County Medical Society met at Vancouver, April 1. The program consisted of reports of clinical cases. The society is in a prosperous condition and includes nearly every physician in the county.

KING COUNTY MEDICAL SOCIETY.

President, Grant Calhoun, M. D.; Secretary, L. H. Redon, M. D.

The first regular semi-monthly meeting of the King County Medical Society was held at the medical library April 15, with President Calhoun in the chair.

Clinical Case

Fracture of the Scaphoid Bone. H. B. Thomson presented a patient with this fracture, following a fall on the extended hand. A radiograph showed a small fragment of bone on the radial side. Two other plates were exhibited of similar fractures.

Pathologic Specimen

Fracture of Cervical Vertebra. F. S. Bourns presented a specimen of fracture of seventh cervical vertebra from a man who was thrown from a bridge. The cord was also badly crushed.

Papers.

Gonorrhea in Its Relation to Pregnancy. F. A. Phillips read this paper, in which she described the dangers of systemic infection, permanent sterility and the gonococcic invasion of uterus, tubes and ovaries. She dwelt particularly on the grave danger of subsequent ophthalmia neonatorium. To check the spread of the infection, legislation and education were recommended. C. W. Sharples attributed the one child family and sterility to gonorrhea. He thought the germ may lie dormant for a long time and be awakened in the presence of proper conditions. He favored segregation and compulsory examination of prostitutes. R. M. Stith thought gonorrhea as dangerous as syphilis on account of the uncertainty as to when it is cured. The presence of the gonococcus leads to changes that predispose to ectopic pregnancy. He dwelt on the danger of septicemia and arthritis. R. J. O'Shea said that if pregnancy followed gonorrhea of the lower genital tract, extension to the endometrium is certain to follow. The presence of the gonoccus is favorable to development of a mixed infection. W. T. Miles thought that gonorrhea in a woman is not necessarily an indication that the adnexa will be attacked. In fact, the existence of pregnancy act as a protection of the tubes.

The Necessity of a Solarium in Seattle. W. McDowell read a paper advocating the establishment of a solarium on the roof of the new municipal building which would afford sleeping accommodation for many cases of early tuberculosis. Selected cases could be sent there, much to the advantage of patient and physician. He favored the endorsement of such a move by this society. W. A. Shannon favored the suggestion, citing similar institutions connected with hospitals and schools in the east. E. R. Kelley favored a solarium provided a suitable location and correct management could be assured. The two great problems in treating tuberculosis are to properly care for advanced cases and to persuade incipient cases to undergo correct treatment. F. S. Bourns believed a solarium a good idea, but whether the proposed location is best must be settled later. If such were established, it must be under certain restrictions as to class of patients admitted.

A motion was carried that, with the consent of the board of county commissioners, a committee of five should be appointed to visit the county hospital to investigate the charges of inefficient management. The chair appointed Drs. Horton, Peterkin, Crookall, Kelley and Churchill.

The following were elected to membership: A. H. Gray, F. F. Markey, W. H. Hall and H. La Motte.

The second regular semi-monthly meeting was held April 19, with President Calhoun in the chair.

PATHOLOGIC SPECIMEN

The Spirochete Pallida. A. Heavenrich exhibited microscopic slides showing this organism and described the methods of staining it in a smear and in section, stating it is found in practically all syphilitic manifestations and in the blood. He described at length the Wasserman serum test and explained the theory of its action. When positive it is conclusive of syphilis. Beside being demonstrated in many syphilitic cases, it has been proven in many parasyphilitic conditions. While complicated at present, it will be simplified in time so as to be at the command of the general practitioner.

PAPERS.

The Treatment of Syphilis. A Lensman, in this paper, said that syphilis is a curable disease and it is our duty so to impress our patients. Treatment must be chosen to suit the individual case and should be instituted as soon as a positive diagnosis is made. Mercury is the true specific in all stages of the disease. Arsenic is still on trial and has not been proven superior. He does not favor mercury by mouth because of danger of gastro-intestinal disturbance nor inunction because of uncleanliness and possible dermatitis. He advocates the injection method which, if properly administered, will not cause pain, induration nor abscess. He uses a 10 per cent. salicylate of mercury solution in liquid albolene, from a small dose up to an average of 10 minims, given deep in the gluteal muscles. Length of time for a cure is unsettled. The best authorities say it should extend over four or five years. The iodides are valuable aids in gummatous lesions, but in themselves never cure syphilis.

The Present Status of Spirochete Pallida. A. MacWhinnie, in this paper, emphasized the importance of an accurate diagnosis of syphilis. At present this should be obtained by recognition of the spirochete pallida or a positive Wasserman reaction. The uncertainty of diagnosis was illustrated by the citation of cases. He described the methods of staining the S. pallida.

Dr. Peterkin read the report of the committee for investigating the county hospital, showing the report of inefficiency was without foundation.

A letter was read from Dr. Axtell, of Bellingham, relative to the Cook relief expedition, and the secretary was instructed to reply as to the action of the society.

Following a letter relative to lectures to be delivered by Dr. P. M. Jones, of San Francisco, a committee of H. M. Read and D. Palmer was appointed to arrange for the same.

The following were elected delegates to the state association meeting in July: Drs. Allen, Lippincott, Holmes, Raymond and Sturgis. Alternates, Drs. Loe, Willis, Lensman, Sundberg and Parker.

The following were elected to membership: J. J. Mustard, S. N. Colliver, A. D. Wilson, H. C. Dyer.

LINCOLN COUNTY MEDICAL SOCIETY.

President, A. D. Snyder, M. D.; Secretary, L. F. Wagner, M. D.

The Lincoln County Medical Society met at Harrington, April 8, eleven members being present. After a banquet was disposed of the following delegates were elected for the meeting of the State Medical Association at Seattle, in July: O. L. Adams and R. P. Moore, of Davenport; alternates, Lee Ganson, of Odessa, and J. Kaulbach, of Edwall.

PIERCE COUNTY MEDICAL SOCIETY.

President, C. H. Kinnear, M. D.; Secretary, O. E. Sutton, M. D.

The regular monthly meeting of the Pierce County Medical Society was held at the Tacoma Hotel, April 6, with President Kinnear in the chair. After the ordinary routine of business had been transacted the following program was presented:

Paper.

Remote Pain in Intra-Abdominal Conditions. This paper was read by Dr. E. W. James.

Pathologic Specimens.

Dr. J. R. Brown presented the following specimens:

Ovarian Cyst Obstructing Labor. This condition necessitated a Cesarean section.

Cyst of Left Ovary. This cyst was found twisted on its pedicle, strangulated and lying to the right of the median line of the body.

Primary Carcinoma of Left Pleura. Dr. Brown will write a paper on last mentioned specimen in a few weeks.

BOOK REVIEWS.

Edited by
KENELM WINSLOW, M. D.

A Text-Book of Medical Chemistry and Toxicology. By James W. Holland, M. D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College, Philadelphia. Second Revised Edition, Octavo of 655 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $3.00 net.

Medical chemistry is one phase of medicine that physicians have neglected, largely on account of the relative unimportance accorded to the science in the medical colleges. There is certainly a great need of this, especially in the writing of prescriptions. The greatest danger in the compounding of medicines is not in overdosage, which is largely taken care of by the pharmacist, nor in physiologic incompatibility, but in chemical incompatibility. This volume takes care of this mistake admirably. It is altogether different from similar books, in that one is reminded that he is reading chemistry. The preparation is considered, its physical and chemical properties, medicinal uses, and then the toxicology which includes the symptoms, fatal dose, treatment, postmortem appearances and finally the detection of material. The introduction contains many interesting things in physics, the chemical elements are described and then a very valuable section is devoted to organic and physiologic chemistry. The portion treating of foods and digestion has to do with laboratory methods of a technical nature, on the urine and milk, the stomach and intestinal contents, the blood and its products in disease as agglutinins, precipitins, lysins and opsonins. The scope of the work is great but the description very brief. It is purely a compilation, but well done, and on a subject that is well worth while.

FICK.

Epoch-making Contributions to Medicine, Surgery, and the Allied Sciences. Being reprints of those communications which first conveyed Epoch-Making observations to the scientific world, together with biographical sketches of the observers. Collected by C. M. B. Camac, M. D., of New York City. Octavo of 435 pages, with portraits. W. B. Saunders Company, 1909. Artistically bound, $4.00 net.

In this book are to be found the following subjects, including the original contributions which established each of the medical discoveries under consideration: Antisepsis, Lord Lister; Circulation of the Blood, Harvey; Percussion of the Chest, Auenbrugger; Auscultation and the Stethescope, Laennec; Vaccination, Jenner; Anesthesia, Morton; and Puerperal Fever, Holmes. The benefits to be derived from the perusal of the original communications of the great pioneers of medicine are many. The acquisition of a modicum of knowledge concerning the salient advances in the medical art is necessary for the physician who has any pretension to learning, but this is one of the least important reasons for a study of the work of such men. History repeats itself and one can not do better than follow the masters in their methods. Again, it is surprising to find that, instead of time leading to improvement in the original work, it not infrequently happens that the opposite is the case. Thus the study of Laennec will make clear a subject which is often now poorly taught. The custom of seeking knowledge at the fountain head is always to be commended. To one envying these great benefactors of the race the story of their struggles to make an obstinate and stiff necked generation to see the truth, and the discouragements, loss of fortune, travail, and suffering which was theirs, will make one realize that there are compensations in being lesser lights. The book is gotten up in the best style and will prove of value and profit to any medical man. WINSLOW.

Manual of Operative Surgery, Vol. I. By Pohn Fairbairn Binnie, A. M., C. M. Fourth edition. Vol. I. Illustrated. Flexible leather. $3.50. P. Blakiston's Sons & Co., Philadelphia.

This little book has attained such a widespread and well earned popularity as to have reached its fourth edition in the short space of a few years. The present edition has so outgrown the modest work of former years that it has been divided into two volumes, the second of which will appear later. The present volume covers the surgery of the head and neck, of the thorax and abdomen, and genito-urinary surgery. The author in the preface declares it his intention to limit the work to a description of practical operative procedures as they are employed today on the living patient, omitting all mention of obsolete methods and operations of doubtful value. In this he has been eminently successful. Operative procedures are described with wonderful clearness and yet completeness, even matters of technical detail not being sacrificed. In the main the work is limited to operative surgery, but here and there valuable aids to diagnosis have been added, particularly in the excellent chapter on the surgery of the pancreas. Other chapters deserving special commendation are those on intra-cranial surgery and on operations of the kidney. It is surprising, though, that a work bearing the date of 1909 should contain no mention of the modern thoracic surgery that has been made possible by the Sauerbruch pneumatic cabinet, or the positive pressure apparatus of Brauer. The volume is of a handy size for reference, and the cuts, while not elaborate, bring out clearly the points made in the text. It is a valuable manual for both students and practitioners. Jones.

A Text-Book of Materia Medica, Pharmacology and Therapeutics. By George F. Butler, M. D., Professor and Head of the Department of Therapeutics and Professor of Preventive and Clinical Medicine, Chicago College of Medicine and Surgery, Medical Department Valparaiso University. Sixth Edition, Revised and Enlarged. Octavo of 708 pages. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $4.00 net; half morocco, $5.50 net.

A former edition of this book has been reviewed in Northwest Medicine for 1907. The work is particularly strong in its materia medica portions, notably in the description of pharmaceutic preparations. There are over 50 preparations of iron described, for example. The sections devoted to physiologic action of drugs are concise and take rather an arbitrary stand in the various divergences of authorities. While too much discussion is perhaps unsettling to the medical student, yet it would only seem fair that he should understand the results of various investigators in respect to some more important drugs. Thus under alcohol one does not find that the drug is regarded by such experimenters as Jacquet to be without any stimulating action on the heart in dilution—when no excitement is produced by circumstances or surroundings—nor that such authorities as Schlemeberg and Bunge believe the action of alcohol on the nervous system to be one of progressive depression rather than that the drug first stimulates and then depresses, according to Binz and his pupils. Also the well-established fact that the inorganic salts act on the body in solution, not as salts but as wholly new bodies owing to the dissociation into their respective anions and kations, is not recognized so far as to describe the action of the individual drug according to its activ ion. However, ionization does receive a very lucid description in a separate section. The therapeutic portions of the book are also concise and in general fairly comprehensive. The book as a whole is an excellent one for students and probably as a text-book on both materia medica and therapeutics depicts more fully all the three chief divisions of the subject—materia medica proper, and the physiologic and therapeutic actions of drugs—than any other one book. WINSLOW.

Constipation and Intestinal Obstruction. By Samuel G. Gant, M. D., LL. D., Professor of Diseases of the Rectum and Anus in the New York Post-Graduate Medical School and Hospital. Octavo of 559 pages, with 250 original illustrations. Philadelphia and London: W. B, Saunders Company, 1909. Cloth, $6.00 net; half morocco, $7.50 net.

As we have learned before, Gant is an enthusiast in his specialty and he has gone quite into detail on the non-medicinal treatment of constipation. This subject is very worthy of the space devoted to it, and it is probably to Gant that we should accord the honor of the first man to put the treatment of this very common and troublesome symptom on a scientific basis, at least in this country. As he says, "We have passed the point where it is only necessary to have a pencil, a prescription pad and a fountain syringe to practise such a specialty. The deplorable habit of drugging constipated subjects until medicines fail to work and then substitute copious enemata—a most pernicious practice—is fortunately becoming more and more a thing of the past and the physician who handles a large number of these cases should be the posessor of a considerable number of aids." The average case of constipation deserves more consideration than is commonly supposed. To effect a cure, the educational and prophylactic side is most effective; the psychic or moral phase must be appealed to frequently; the direct treatment needs no further emphasis nor does the value of properly instituted exercise. He is a most consistent prescriber, but is so enthusiastic in his topic that he frequently indulges in the rather annoying fault of frequent repetition. The section devoted to the anatomy of the bowel and especially the surgery may be read with great profit. Every practitioner should have this book. FICK.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, Vol. XI., No. 1, March, 1909, Octavo, 277 pages. Per annum, in four paper-bound volumes, containing 1,200 pages, $6.00 net; in cloth, $9.00 net. Lea & Febiger, Philadelphia and New York.

In this volume are to be found the following subjects reviewed: Surgery of the Head, Neck and Thorax, Frazier; Infectious Diseases, Preble; Diseases of Children, Crandall; Rhinology and Laryngology, Kyle; Otology, Duel.

Frazier discusses very interestingly cerebral trauma in the light of recent knowledge. The old classification of concussion, compression and hemorrhage has been abandoned in head injuries. Now we have two classes: (1) Local lesions with focal symptoms caused by pressure from clot and depressed bone; and (2) cases without focal symptoms and representing general increased intracranial pressure caused by generalized edema or hemorrhage. Recovery depends upon the ability of the heart to overcome the exalted intracranial pressure. As diagnostic points, protrusion of the eyeball and choked disc show increased intracranial tension, while, if lumbar puncture gives a bloody fluid, damage to the brain, with ventricular and subdural hemorrhage, is suggested. Hemorrhage into the brain does not give it; fracture of the base generally does. In fracture of the base a decompressive operation is often advisable in order to relieve intracerebral tension; Harvey Cushing recommends the operation in all cases of basal fracture.

Cancer of the lip. In 156 cases operated at the Mayo clinic three only were of the upper lip and five only in women. Of 44 cases traced three years after operation—with removal of submental and submaxiallary lymph nodes—all but three lived without recurrence. Considerable space is given to the review of recent literature on goitre. One finds, also, the latest knowledge concerning surgery of the esophagus, breast and lungs. Preble furnishes us a very thorough summary of progress in Infectious Diseases, including acute rheumatism, influenza and croupous pneumonia. WINSLOW.

Refraction and How to Refract. Including sections on Optics, Retinoscopy, the Fitting of Spectacles, etc. By James Thorington, A. M., M. D., Professor of Diseases of the Eye, Philadelphia Polytechnic, etc. Fourth edition, 220 illustrations, 324 pages. Cloth. P. Blakiston's Son & Co., Philadelphia. $1.50.

Thorington is a master of refraction. It is safe to say that few in this or any other country are his peers. Refraction and how to refract has, generally speaking, reached the highest degree of perfection in the United States. (So, also, has the making of lenses.) This book contains all the facts and principles one requires in order to work out a problem in refraction. The price is cheap for the material it contains. BURNS.

Saunders' Pocket Medical Formulary. By William M. Powell, M. D., Author of "Essentials of Diseases of Children." Ninth edition, adapted to the 1905 Pharmacopeia. Philadelphia and London: W. B. Saunders Company, 1909. In flexible morocco, with side index, wallet and flap, $1.75 net.

Containing 1831 formulas from the best known authorities. With an appendix containing Posologic Tables, Formulas and Doses for Hypodermic Medication, Poisons and their Antidotes, Diameters of the Female Pelvis and Fetal Head, Obstetric Table, Diet-lists, Materials and Drugs used in Antiseptic Surgery, Treatment of Asphyxia from Drowning, Surgical Remembrancer, Tables of Incompatibles, Eruptive Fevers, etc., etc.

NORTHWEST MEDICINE

THE JOURNAL OF THE
WASHINGTON STATE MEDICAL ASSOCIATION.

June, 1909

ORIGINAL CONTRIBUTIONS

THE TREATMENT OF ACUTE AND CHRONIC INFLAMMATION WITH HYPEREMIA.*

By Everett O. Jones, M. D.

The idea of making use of an increased volume of blood in and around a diseased area as a means of combatting the pathologic process was suggested to Prof. Bier by the observations of Rokitansky, who found that patients who had suffered from stasis of the pulmonary circulation, caused by heart disease or curvature of the spine, never showed an active tubercular process in the lungs on postmortem examination. On the other hand, certain diseases of the heart, such as pulmonary stenosis, which tend to produce anemia of the lungs, especially predispose to tuberculosis.

Bier was also impressed with the seemingly commonplace fact that a certain degree of hyperemia accompanies all the important vital processes. Every organ which functionates becomes hyperemic during its periods of activity. In every growth and regeneration local hyperemia is present. Indeed, the more active and energetic the growth the more pronounced the hyperemia. Every act of conception and reproduction is accompanied by it. In no reaction of the organism to an irritant is hyperemia lacking.

In fact, there is never a focus of disease, which the body destroys or even attempts to eradicate, which presents anemia. On the contrary, it is always surrounded by a zone of hyperemia.

If we consider then this reaction of the bodies as a useful attempt at healing on the part of nature, we must conclude that hyperemia is the most widespread method of self recovery that exists. Having reached this conclusion it is but a step further to consider those usual accompaniments of inflammation, heat, redness, and edema, not as innately dangerous and vicious processes, which are to be combatted by all means possible, but rather as evidences of a natural therapeutic hyperemia, by which the body is attempting to throw off or destroy a disease focus.

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*Read before the Seattle, Wash., King County, Medical Society, Seattle, Wash.

Instead, then, of attempting to combat or mitigate these phenomena by all manner of "antiphlogistic" applications and measures, is it not more rational to support and encourage nature in her efforts by judiciously increasing the hyperemia by artificial means.

If we observe nature more carefully we will see that, while in all the important processes of the body a local hyperemia is present, this hyperemia is not always the same. At one time it is accompanied by a slowing of the blood stream, at another by acceleration. A closer observation will show that the latter is the case in the functional hyperemia accompanying the activity of organs. The first form is always present when the tissues are attempting to throw off the effects of an irritant, or when new tissue is being rapidly formed. If, then, we wish to imitate the processes of nature and support and increase a useful hyperemia we must slow the blood stream in one case and in the other accelerate it.

Between the rapidly flowing arterial blood and the more slowly moving venous stream there are wide differences not only physical but also chemical. Although our knowledge of the physiologic chemistry of the blood is still very imperfect, yet we know that the one is rich in O and poor in CO_2 and free alkalies, the other just the reverse. The one is a comparatively easily moving fluid, the other more adherent and stagnant. The rapidly flowing blood stream carries its fluid and solid parts along with it; the more slowly moving stream allows them to permeate through the tissues where they do their work.

This, then, is the fundamental idea on which Bier founded his hyperemia treatment. It was eighteen years ago as an assistant under von Esmark, at the surgical clinic at Kiel, that he began his experiments with the artificial production of hyperemia for therapeutic purposes. He confined his attempts at first to tuberculosis, but from time to time extended them to other processes. His first attempts were not always successful, in fact, they were often unsatisfactory but, fully appreciating the significance of the principle which he had discovered, an original worker of the stamp of Bier was not to be baffled by difficulties. He clung to the further elaboration of his idea, though he changed his methods and technic from time to time as his experience grew.

Beginning with superheated dry air, then using suction cups, he finally adopted the constricting rubber bandage, all three of which he now uses according to the particular condition to be treated. He applied these methods on the extensive material of the Kiel clinic, and later at Greifswald, where he was called to be chief. His well known book, "Hyperämie als Heilmittel," first appeared in 1893, but in spite of the wealth of new and interesting observations which it contained it received but scant attention from the surgical world. In spite of this indifference Bier and his assitants persisted in their efforts, again and again pointing out the benefits to be derived from the treatment. After his call to the chair of surgery in the University of Bonn, he devoted the entire wealth of material in the clinic to the demonstration of the values of his method. It was in Bonn that the writer had the opportunity of seeing him, of learning the technic of his method and of seeing the results which he and his assistants obtain with it. At the present time the former indifference of the surgical world to hyperemia has entirely disappeared. Since Bier extended his treatment to surgical inflammations of an acute character, thus overthrowing as it were all the time honored views as to inflammatory processes and their treatment by ice, elevation, rest, etc., interest in his work has steadily grown.

As we have just seen, two forms of hyperemia are recognized and used, the active and the passive. The first may be roughly defined as occurring when an increased quantity of blood flows to a part and the tissues are permeated with an increased amount of fluid. It is practically synonymous with arterial hyperemia. It is best produced by means of superheated dry air in the well known ovens made in different shapes to fit different parts of the body. These ovens have enjoyed a wide-spread use of recent years for all sorts of medical and surgical complaints, on the whole with but indifferent success. The fact has apparently been forgotten that these hot air apparatus were first devised by Bier solely for the purpose of producing an active hyperemia for the treatment of surgical inflammations. As a general measure they proved unsatisfactory. Further experience and study showed him that the type of hyperemia necessary to combat inflammatory processes was one accompanied by a slowing of the blood stream rather than acceleration. That is the second or passive form of hyperemia, which is produced by a partial obstruction of the return flow.

This form of hyperemia is produced by constricting rubber bandages and suction glasses. Early in his work Bier made use of cups, but they then proved unsatisfactory and were abandoned. Of late years he has taken them up again in a somewhat modified form, and is getting excellent results with them, largely due to the inventive genius of his two assistants, Professors Klapp and von Schmieden, who have invented a great variety of glass apparatus for application to the different parts of the body.

The constricting rubber bandage remains, however, the principal method of producing hyperemia. In general it is applied as follows: An ordinary rubber bandage 2 1-2 to 3 inches wide is applied to the limb well above the diseased area. Four or five turns are applied so that each covers about one-half of the preceding. If the skin be easily irritated a few turns of a muslin bandage may be applied first, but this is usually unnecessary. For the same reason the location of the bandage should be changed at each reapplication. The all-important point in the technic is the degree of constriction produced for, as more or less constriction is applied, will the degree and form of the hyperemia vary. In order to describe concretely the phenomena that should be produced we will suppose that the bandage has been applied to the arm between the shoulder and the elbow. It should be applied with just enough firmness so that no disagreeable sensations are produced; indeed the patient should forget all about its presence. The first thing noticed is a swelling of the subcutaneous veins of the back of the hand and the anterior surface of the forearm. The skin of the forearm takes on a dusky hue. The palm of the hand and the skin over the point of the elbow become a bright red. In a few minutes the same color appears on the back of the hand and the fingers. In the skin of the palm can be seen countless minute white spots of the size of a millet seed, in less numbers also on the back of the hand. If the skin be more carefully examined a delicate network of small subcutaneous veins previously invisible can be made out.

After about three hours the bright red color has spread over the entire hand and forearm; only immediately over the large subcutaneous venous trunks is the former dusky color to be seen. The pin head white spots have disappeared, a moderate swelling of the extremity as a whole is evident, and sharp pressure with the finger on the back of the hand shows beginning edema. The radial pulse is full and strong, if anything rather stronger than on the other side. The extremity feels warm and careful measurements with a cutaneous thermometer show that the temperature actually is elevated. After ten hours the swelling is very evident, the circumference of the forearm is from one-half to three-fourths of an inch greater than before, and the skin pits everywhere on pressure. After ten hours the swelling has but slightly increased, the same bright red color persisting. The subcutaneous veins are still less visible than before. Palpation over the larger trunks shows that they are not merely covered by the edema, but that they are actually less distended than before.

Should the limb constricted be the seat of an acute inflammatory process the phenomena above described will be still more evident. The color is bright red, the swelling and edema appear more rapidly and are more pronounced, the temperature of the limb is as much as two degrees higher than the other and, most important of all, the pain caused by the inflammation rapidly subsides.

Should, however, the bandage be applied too tightly the following phenomena will be observed. The subcutaneous veins are markedly swollen and blue in color. The skin of the forearm is blueish red. In the palm of the hand appear bright red spots, which later become dull red or yellowish in color. Pressure with the finger produces a white spot which immediately becomes colored again. The arm feels heavy and there is a numbness and tingling in the fingers. The skin feels cooler than that of the rest of the body. Small punctiform hemorrhages appear, especially under the bandage. The numbness in the hand is soon followed by pain, which in 30 or 40 minutes becomes unbearable and the bandage must be removed. This hyperemia is very near a venous stasis and should never be induced, as only harm can come thereby. The three points that should always be observed in applying the bandage are the color of the skin, the temperature of the part, and the subjective sensations of the patient. Whenever the color of the skin approaches blue rather than red, the part feels cooler than the rest of the body, or the patient complains of pain, we may know that the bandage has been wrongly applied.

The length of time that the bandage remains in place varies with the condition treated, in the majority of cases about 20 hours, except in chronic bone and joint tuberculosis, when a somewhat more powerful hyperemia is produced, the bandage remaining on only one or two hours.

To apply constriction above the shoulder or hip joints or to the testicle, a single length of stout rubber tubing is used and the ends held together with a hemostat. To apply hyperemia to the head, take a strip of woven elastic bandage 2 1-2 or 3 inches wide and long enough to go around the neck. Sew three or four rows of hooks and eyes on the ends, about one-fourth inch apart. Fasten the ends over the back of the neck.

The same form of hyperemia is produced by the use of the suction glass. They are particularly useful when a small area is to be treated or when the disease is located on the trunk, where bandages cannot be applied. In addition to producing hyperemia these glasses have the further effect of sucking pus, serum, or other fluids out of the tissues. This makes them especially valuable in the treatment of acute and chronic abscesses, lymphadenitis, fistulae, etc.

Cups are furnished in all shapes and sizes to fit any part of the body. Forms have also been devised for use within the nose, pharynx, mouth, rectum, and vagina. The glasses must always be sterilized by boiling before use. The part to be treated is well smeared with sterile vaselin. Always select a cup of such size and shape that the edges are applied to the skin well outside the diseased area. By pressing the bulb, exhaust the air enough to produce the same degree of hyperemia that we produce with the bandage. This suction is kept up for four minutes and then is stopped for one minute, the glass, however, not being removed. And so alternately four minutes on and one minute off, this treatment is kept up for forty or fifty minutes and repeated once or twice a day according to indications. As with the bandage, the same precaution is to be observed not to produce pain or venous stasis. More recently large glass suction apparatus have been devised, which receive a part or a whole extremity. They are particularly useful in orthopedic work.

Probably the most striking effect of hyperemia is its power of relieving pain. Both the active and the passive forms have this power. The painful joint of chronic rheumatism is relieved by the use of the hot air oven, and still more marked is the effect of a properly applied bandage on the frightful pain of gonorrheal arthritis.. The same result is seen in the case of felons. Various neuralgias, headache, and even toothache can be relieved by the application of a bandage about the neck. Indeed, in all painful inflammatory affections where hyperemia is at all useful, the same analgesic effect is the most striking result. Bier is inclined to explain this as being the result of the oversaturation of the tissues with serum, in much the same manner that the infiltration anesthesia of Schleich is produced.

When one observes infective inflammations rapidly disappear under the use of hyperemia, and sees how the change for the better sets in almost immediately after the beginning of the treatment, one can hardly doubt that we possess in this treatment a bactericidal agent of marked power.

Nötzel some years ago proved experimentally the bactericidal powers of hyperemia. He inoculated 67 rabbits with fatal doses of anthrax bacilli, and subjected the inoculated portion of the body to hyperemia. Fifty-one showed no effects of the inoculation. That this was solely the result of the hyperemia was shown by inoculating the same animals a few weeks later in the same manner without hypermia. All succumbed to the infection. The same experiments with staphylococci and streptococci gave similar results. Experiments of Joseph and Colley seem to show that this power lies in the edematous serum which saturates the tissues.

Hyperemia, further, seems to possess the power of absorbing exudates, of encouraging the breaking down and reabsorption of solid deposits within the tissues, and to a certain extent of increasing the nutrition and growth of cells. This is shown by the increased growth of the epithelial layers of the skin, of the hair and of bone in parts subjected to hyperemia.

Tuberculosis.

Bier made his first attempts with hyperemia on tubercular arthritis. Probably his most brilliant results have been obtained in this condition, but not without numerous serious failures. Indeed, the exact technic for the treatment of tuberculosis was most difficult to formulate. Again and again did he have to modify his methods before a satisfactory procedure was worked out. And today the treatment is more difficult to carry out and requires a more thorough knowledge of the finer details of the technic than is the case with any other condition for which hyperemia is applicable.

The procedure now used by Bier is as follows: The bandage is applied somewhat tigher than is ordinarily used, but continued only for short intervals, one to three hours daily. Pain or discomfort must never be produced, nor must the congested area become cold, nor should the pulse be diminished in volume. On the other hand, the color produced is a deep, dusky red, instead of the usual scarlet. Even a tinge of blue is not out of the way. Only a trifling amount of edema is produced. The presence of cold abscesses should be determined as soon as they form. They are opened early by minute incisions and treated daily with the suction glass, between times being covered with voluminous sterile dressings, the use of the bandage not being interrupted. Experience has shown that there is no danger of secondary infection under this treatment. All mutilating procedures, such as probing, swabing, curreting, or cauterizing of abscess cavities, or the making of large incisions must be avoided, for therein lies the danger of secondary infection. Contrary to the usual rule, rest and splints are not made use of. On the other hand, passive motion is at once begun, and the patient is encouraged to use the part as much as possible, a thing that is made possible by the analgesic properties of the hyperemia. The only exception to this rule is in the case of the knee and ankle joints, where light removable splints are to be used. Complicated dressings should not be employed, and fistulae should never be packed, or strips of gauze be introduced. The use of iodoform should never be combined with hyperemia, as the results are very unsatisfactory.

The small incisions should be carried out under the strictest asepsis, local anesthesia being used. The treatment is not to be interrupted when the disease is apparently aggravated, as often happens. This is due to the development of cold abscesses which often appear in rapid succession after beginning the treatment. They disappear under the use of the suction glass, and later the whole process shows surprisingly rapid improvement. No distinction is to be made between closed or open tubercular processes, nor is age a contraindication. Children and adults give equally good results.

The only contraindications worthy of mention are the presence of amyloid disease or extensive pulmonary tuberculosis, when amputation is to be advised, also in tubercular empyema of the knee joint. Indeed, up to the present time the knee has proved very refractory to hyperemia, and probably, on the whole, better results can be obtained by resection.

Bier's reported results are as follows: Tuberculosis of the wrist and hand, 17 cases. Cured with perfect motion, 15. Improved, 2. Average length of treatment, 12 months.

Tuberculosis of the elbow joint, 11 cases. Cured, 8 cases. None with perfect motion, but all with functionally good joints. Improved, 3 cases. Average length of treatment, 9 months.

Tuberculosis of the foot and ankle, 13 cases. Cured, 8. Improved, 3. Unimproved, 2. Average length of treatment, 10 months.

Tuberculosis of the knee, 13 cases. Cured, 3. Improved, 2. Unimproved, 8. All of which were treated by resection.

Tuberculosis of the shoulder, 1 case, cured with perfect motion.

Excellent results have been obtained in tuberculosis of the testicle and in tubercular hygromata with the constricting bandage, and in tubercular lymphadenitis with the suction glasses.

In pure bone tuberculosis where joints are not involved, as a general rule the operative removal of the diseased area gives better results than does hyperemia.

Acute Inflammations.

In acute infections and their sequellae, in contrast to tuberculosis, hyperemia is applied from 20 to 22 hours. During the remaining 2 to 4 hours the part is elevated in order to reduce the marked edema that is produced. Occasionally, when the situation of the part makes it necessary that the bandage be always applied in the same place, applications are made for shorter intervals in order to avoid pressure necrosis of the skin. The application of the bandage here is as a rule less difficult than in tuberculosis. The same rule in regard to pain holds good. Indeed, the pain which usually accompanies acute inflammations rapidly subsides in the great majority of cases. The proper color of the hyperemic area is bright red. Edema and swelling are very marked.

It is important in all acute suppurations to apply all dressings very loosely, as a very small amount of constriction may be sufficient to hinder the development of edema. To retain dressings on the extremities, the use of one or two handkerchiefs held together by safety pins will be found very useful. They allow extreme swelling and still hold the dressings accurately in position. In all acute inflammations in or about joints or tendon sheaths passive motion should be instituted just as soon as the hyperemia has relieved the pain and tenderness.

One of the most brilliant results of hyperemia is the aborting of suppuration. Unfortunately it is a result that is not often seen for, to be obtained, treatment must be applied in the very early stages of inflammation, earlier than the majority of cases present themselves for treatment. When the bacterial toxins have already produced local necrosis then naturally it is too late to prevent suppuration.

This abortive power over inflammation may be used as a prophylactic measure in operation wounds which for any reason have become infected, or in accidental wounds when infection is present or suspected. The following case which I quote from my notes illustrates this:

Feb. 16, '07, a 19-year-old laborer cut the back of his hand with a hatchet. He was brought to the clinic at once. There was a badly contused wound extending from the metacarpophalangeal joint of the little finger to the lower end of the radius. All the extensor tendons were divided. The intercarpal articulations in the course of the wound were opened, and the bones injured. The tendons were united with catgut and the skin with silk. Feb. 20, the patient developed fever with severe pain in the hand and forearm. The entire hand was swollen and the edges of the wound red and edematous. One stitch was removed and considerable pus evacuated. A constricting bandage was immediately applied. In an hour the pain had subsided, the following day the temperature was normal. Three weeks later the patient was discharged with perfectly moveable fingers.

The suction glasses are also of value in the treatment of infected wounds, particularly in stitch hole abscesses after operations. Even fecal fistulae have been closed by them.

In addition to the application of the constricting bandage, the inflamed area must be watched carefully for the development of pus. As soon as its presence is detected, a very small incision is made under local anesthesia, a cupping glass applied and all pus and blood extracted. After a three hours' wait the constricting bandage is reapplied. In case of deep-seated collections of pus, as in acute osteomyelitis, periostitis, felons, or suppuration of tendon sheaths, a somewhat larger incision under general anesthesia is made. At no time should drainage, gauze packing, or anything of the sort be introduced. The incision is simply covered with a voluminous dressing of dry sterile gauze, held in place by the handkerchief bandage. The dressings are changed daily, the cupping glass applied for forty minutes and the constricting bandage reapplied.

Gonorrheal arthritis offers another field in which hypermia has produced results which are well night revolutionary. Where formerly every method of treatment failed to relieve pain, and prevent long periods of invalidism, followed by more or less ankylosis, we now see most brilliant results obtained. I have never seen a method of treatment in any illness (antitoxin in diphtheria not excepted) which works so magically as does hyperemia in ordinary gonorrheal rheumatism. Within a few hours after the application of the bandage the joint that was so exquisitely tender that the slightest touch produced agonizing pain, can be subjected to careful passive motion without discomfort.

Nov 6, '07, I was asked to see Mr. C., 20 years of age. Three months previously he had contracted gonorrhea. Ten days before I saw him he suddenly developed an acute arthritis of the left ankle. The joint was uniformly swollen, the circumference measuring 2 1-2 inches more than the other. Pain was extreme, so much so that he had been unable to sleep except with the aid of morphin. The bandage was immediately applied. That night he slept soundly without the help of an opiate. The next day the patient began of his own accord to move the foot. Three days later careful passive motion was begun. Hyperemia was continued for two weeks. Then the length of the daily applications were gradually reduced and at the end of the third week discontinued. At that time the joint was slightly larger than the other, but was painless and freely moveable.

I have also had the opportunity of treating two other cases involving the knee joint. In both the end results were equally good, no ankylosis following, though in neither case were the effects so immediately striking as in the first. The length of treatment was also somewhat longer, in one case six weeks and in the other nine.

In severe cases of gonorrheal rheumatism it is absolutely necessary that the bandage be applied for long periods of time, at least 20 hours daily. Otherwise, good results are not obtained. The best results are seen when an extreme degree of edema develops rapidly after the application of the bandage. Now and then cases are seen in which it is impossible to induce the necessary amount of edema. These cases are always less favorable. They run a longer course and are inclined to be followed by more or less stiffness. After the acute symptoms have subsided these cases do well with active hyperemia in the hot air oven.

Suppurative arthritis other than gonorrheal in origin shows good results also with this treatment. While in Bonn I saw two cases of suppurative arthritis the result of puerperal infection. Both recovered with but a minimal amount of ankylosis.

Willy Meyer reports a case of suppurative inflammation of the interphalangeal joint of the thumb so treated, resulting in complete cure with unimpaired motion. Dickinson reports 26 cases of infected wounds of various sorts, all of which improved markedly in three or four days under hyperemia.

On Jan. 25, '08, I was asked to see C. S., 18 years of age, a logger by occupation. Ten days before he had wounded the skin over the point of the elbow with an ax. No attention was paid to the wound which suppurated. A week later he developed a suppurative arthritis of the elbow. When I saw him the joint was red, swollen, and intensely painful. Aspiration showed pus in the joint cavity. Hyperemia was begun at once. Pain and fever disappeared rapidly. Six weeks later the patient was discharged with slight impairment of motion remaining.

I have seen equally good results with hyperemia in felons, palmar abscesses, and suppuration of tendon sheaths. Short incisions, evacuation of pus with the suction glass, voluminous dry gauze dressings, no packing or drainage, and constriction hyperemia, constitute the treatment.

It may also be mentioned that in acute lymphadenitis, parotitis, erysipelas, acute mastoid, frontal sinus and antral suppuration, and in fracture of the base of the skull, hyperemia has apparently been useful. In carbuncles, furuncles, and post partum breast abscesses suction glasses are used with great satisfaction, and give splendid cosmetic results.

Bier has given us in this method a new and most powerful weapon in the warfare against disease. He and those who have worked with him have shown that this weapon, handled either alone or in conjunction with slight surgical operations, enables us to treat many acute and chronic surgical diseases more conservatively, with less discomfort to the patient, and at the same time with far superior functional results than have heretofore been obtained.

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THE DIAGNOSIS OF INCIPIENT PULMONARY TUBERCULOSIS.*

By H. M. Page, M. D.,

FREEWATER, ORE.

The importance of the subject which I have chosen for this evening without question concerns us all. Its diagnosis is most difficult because the evidence is wanting, and its absence will not permit an early diagnosis. But since the brightest prospects for the patient (and his friends) mean an early diagnosis, we must depend more upon the constitutional than the local symptoms before the physical signs manifest themselves, or before the sputum is found positive. Since the sputum is negative in two-thirds of the incipient cases, I feel that an early diagnosis should be made before we obtain bacteriologic proof from the sputum.

The statistics in the autopsy reports which I have consulted vary enormously (from 4 to 50 per cent.), with an average of 25 per cent. showing the existence of an old healed focus in the lung, yet the personal history gave no evidence of pulmonary tuberculosis, and the death of the individual was caused by some other disease. The manifestations of this disease are so vague that we may well pause to consider how easily it escapes our detection. And I often wonder if we in general practice are not guilty of the sin of not looking rather than not knowing. Our interpretation of the things we see is not so much at fault as our inability to make the correct observation.

When we consider how widespread phthisis is; that five millions of people die annually from this cause, making a mortality of 14 per cent.; that 33 per cent. of all people, whose age falls between 15 and 45 years, die from this cause; that at this same rating one-seventh of our population is destined to die from pulmonary tuberculosis; that 150,000 lives were sacrificed in the United States last year, and that this mortality exceeds that of the recent earhquake in Southern Italy, is it not appalling that we fail to make more of the early diagnoses and also that we are not constantly suspicious in the unexplained manifestations of disease, of the possibility, nay, even probability, of this insidious, though nevertheless positive foe to the white man? Without a doubt the general textbook paints the picture in a very dogmatic form and fails to present the *uncertainties* in diagnosis we meet in practice.

The first consideration, therefore, will be the history. The family history as a factor in the environment, and an occupation in dust, smoke or moisture may play an important role in predisposing or rendering the patient susceptible to infection. When there is a history of pulmonary tuberculosis in the family, it is fair to assume that the offspring inherit a lessened physiologic resistance, though the disease be not an heritage. While considerable information may be obtained by allowing the patient to tell his own story, there is many a patient who feels a personal disgrace in reporting the history of consumption in his family. Therefore, he often omits these facts, so that cross-questioning a patient after he has told his story will many times give these details.

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*Read before the Walla Walla Valley Medical Society, Walla Walla, Wash., Feb. 9, 1909.

The history of previous diseases is oftentimes most inaccurate, for it is not uncommon to obtain a history of malaria, typhoid, bronchitis or influenza when in reality the case was one of a sudden lighting-up of a tuberculous process. Then, again, the diseases directly referable to the respiratory tract, as branchitis, whooping-cough, pneumonia or a pleurisy, especially the last mentioned, should arouse our suspicion of the possibility of a pre-existing tuberculous infection. Otis has called attention to the fact that the vast majority of cases of pleurisy are tuberculous in origin.

Any departure from the health, as the feeling of languor, with faulty circulation, anemia, cold extremities, tendency to free perspiration in cold weather; any disorder along the digestive tract, as anorexia, diarrhea, or constipation which is the more frequent in occurrence; any disturbance in the nervous system, as the pallid or the florid fascies; an accelerated pulse rate, slight shortness of breath on exertion, or any evidence of disturbance of nutrition as gradual loss in weight should arouse our suspicion, and demand an examination of the chest.

How often it happens that routine physical examination of our patients reveals the presence and activity of several diseases. This fact was constantly asserting itself during my interneship, and so frequently was found an active process in the apex of the lung, when, in fact, the patient had entered the hospital solely for some other disease.

According to Norris, there are four easily ascertainable symptoms, namely: rapid pulse, evening rise of temperature, loss of weight, and cough. The protracted existence of any two of these symptoms requires that good cause be shown why a diagnosis of tuberculosis should not be made. Edwards says that the rapid pulse first appears only after meals, or exertion, but later becomes permanent and, though probably toxemic in origin, it may be due to the mechanical pressure of large lymph glands (nodes) on the vagus. The character of the pulse is soft, the blood pressure is constantly being reduced, and the bright red cheeks are due to vasomotor instability. Dunham says that the best early symptomatic guide is the pulse, and if 90 or above while resting, and occurring in the latter part of the day is very suggestive of pulmonary tuberculosis.

When not otherwise explained, the three most important symptoms, according to Pryor, are hemoptysis, fever, and loss of weight. Hemoptysis occurs in a variable percentage. Edwards says it is the first symptom in 4 per cent. of the cases, and is the *only* symptom in 16 per cent. The occurrence of early hemorrhage before other symptoms of phthisis led Hippocrates, Borhaave, Van Swieten, Morton, Graves, Niemeyer and others to think hemoptysis caused phthisis, while Louis and Traube correctly regarded it as a symptom of already established phthisis. Reiche considers early hemoptysis as not an unfavorable symptom and, insofar that it enables an early diagnosis, the treatment may be hastened. In women amenorrhea, when present, is often one of the early symptoms.

According to Wilson, two very important symptoms are cough of considerable standing, accompanied by evening rise of temperature, or a sub-normal temperature in the morning. In the early stages fever is present in the vast majority of cases. The presence of the fever indicates an infection, probably toxemic. The height and course of the fever is influenced by the individual. "Labile individuals," says de Renzi, "possess labile temperature centers." The loss of weight is associated with the fever and seems to be due to the toxin absorption, for Pryor says that the loss of appetite and indigestion are not early manifestations of the disease. Therefore, the loss of weight does not depend primarily on loss of appetite.

"The cough, no matter from what cause," says Otis, "if it is continued from six, eight or ten weeks, should always excite our suspicion and demands our investigation." He furthermore says, "It is an all too common experience that a patient comes to us with more or less advanced tuberculosis, who has been told that the cough, which has continued over many months, was the result of a bronchitis and hence he was deluded by the false hope that it would disappear in time and not be of serious import. Much less harm would result if every cough of over eight or ten weeks' standing should be regarded as indicating tuberculosis and the patient treated for the disease, if no other discoverable cause for the existence of the cough should be found."

The laryngeal symptoms are usually hoarseness and pain, and an examination of the larynx may reveal a thickening of the ventricular band, cord or arytenoid. According to Getchell, the invasion of the larynx is to be regarded as secondary to the process in the lung, though the symptoms and signs in the lung may be obscure. Furthermore, he considers that, when the larynx is first involved, there is redness of the parts rather than pallor, while later the pallor corresponds to the anemic condition of the patient.

According to Janeway, there may be absence of physical signs, yet the disease be present. For proper inspection the patient should be stripped to the waist and facing the light, with the examiner behind. Any cutis anserina, venous plexuses or inequality in the excursion of the lungs, especially a lagging apex, should be noted. If there be a contracted apex, the supraclavicular spaces will appear excavated and such a depression may be due to pleural thickening, atelectasis, cavity, or gradual induration. Much has been stated regarding Litten's phenomenon, and also the increased lateral diameter of the pupils as an early evidence of pulmonary tuberculosis. These two statements I have been unable to verify.

In the early stages palpation with the thumbs above and the fingers below the clavicles may detect a lagging apex, indicative of decreased expansion. Increased tactile fremitus (consolidation) does not occur early, but rather is one of the latter signs. In the early stage the percussion note is not changed; it may be short in quality, but the dulness is a later manifestation. It must be constantly borne in mind that physiologically the right chest is higher pitched and transmits sound louder than the left. According to Grawitz, the apex is first involved in 88 per cent. of the cases, and Lännec says that in adults the apex of the upper lobe, more often the right than the left, is first affected. Therefore, any changes found in the left apex is better evidence of a pathologic process.

The easiest and surest method of ascertaining changes in the lung tissue is obtained by auscultation and this requires constant training and guarded judgment. Auscultation reveals changes in the respiratory murmur and the presence of rales. The right apex *behind* is the area most commonly involved, and distinct changes in the character of the respiratory murmur or rales are found behind when, in fact, I had been unable to detect anything abnormal at the right apex in front. Hence the importance of auscultation of the apex behind.

The first departure from the normal in the apex is weakened breathing, as less air is finding its way into those alveoli, and this condition is followed by three changes in the expiratory tone, namely: its higher pitch, its roughness and its prolongation. Forced breathing should not be required until careful examination has been made of easy breathing. Increased whispered voice is of importance as indicative of the prolongation of the expiratory murmur.

Rales are evidence of infiltration (consolidation) rather than "catarrh" (Edwards), and may not be heard unless the patient breathes deeply or coughs. If the rales persist after deep breathing or coughing and are heard at the end of the inspiration regardless of their character, but particularly if moist or sticky, then the evidence is very strong that there is a tuberculous process as the cause.

The tuberculin test is of decided value and its technic is simple and comparatively harmless. My own experience with the subcutaneous injection has given me but little practice, as my interneship comprised about thirty cases. The preparation employed was Koch's old tuberculin. The dosage varied from 1-10 to 3 mgm. and the interval before repetition of doses (or more truly an increased dose) was 48 hours. Of course, no repetition was necessary when the patient produced a reaction. Under no circumstances was the patient permitted to leave his bed during the test.

The cutaneous test, as performed by von Pirquet, one drop of the old tuberculin being employed, is a method very simple in its technic —as easy as a vaccination against smallpox—and the positive reaction is one more factor in establishing our diagnosis.

The Wolff-Eisner test, or the ophthalmo-conjunctival reaction of Calmette, has been introduced for nearly two years. From the reports many unpleasant results have occurred and it does not appear to be wholly without harm. I have had no experience with this test (five among the professional brethren in Spokane and Portland refused to sumbit me to the test, sixteen months ago), therefore I am not qualified for an opinion.

With the use of tuberculin a positive reaction indicates tuberculosis active or latent somewhere in the individual, though not necessarily in the lungs. If there be no reaction to the test, it is of greater value and goes far toward disproving the tuberculous character of the disease in question (Lord).

A very interesting article by Rosenburger has just been published in the *American Journal of Medical Sciences,* Vol. CXXXVII., p. 267, on "The Detection of the Tubercle Bacillus in the Blood." In the 125 cases studied by him the blood was positive in all. This gives positive proof that tuberculosis is a bacteremia and that a culture medium may be made directly from the blood. By this method of procedure a positive diagnosis can be made long before the bacilli appear in the sputum. This does not lessen the value of a positive sputum, but it certainly does add another spoke to the wheel, particularly in its *early* diagnostic value.

For an early diagnosis it behooves each one of us to make use of laboratory methods, more and more, if we are to promote the life and welfare of the distressed.

ACCIDENTAL HEMORRHAGE.*

By R. J. O'Shea, M. D.

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In accidental hemorrhage and placenta previa we deal with the separation of the placenta, causing bleeding in the last four lunar months of pregnancy. The child is viable. If bleeding occur from separation of a normally situated placenta, the condition is called accidental hemorrhage; if from an abnormally situated placenta, it is called placenta previa or unavoidable hemorrhage.

A placenta situated above Bandl's ring or border is a normally situated placenta. Its premature separation, when it occurs in the last four lunar months of pregnancy, leads to a condition known as accidental hemorrhage. A placenta situated either in part or wholly below Bandl's ring is an abnormally situated placenta and its premature separation is inevitable and leads to unavoidable hemorrhage, namely, that of placenta previa. In this paper I shall mention only accidental hemorrhage and its causes.

Causes. Anything that leads to an unhealthy or diseased decidua; hence endometritis, Bright's disease, arteriosclerosis, syphilis, alcoholism, all render a pregnant woman liable to premature separation of the ovum, leading to abortion, miscarriage or accidental hemorrhage. A fall or similar accident may be the determining cause. The occurrence of accidental hemorrhage is one of grave danger to the patient, next to sepsis the greatest risk a pregnant woman runs.

Accidental hemorrhage is divided into concealed and revealed. In the first the blood is retained in the uterus, in the second it escapes at the vulva. The first is rare and fatal. Concealed accidental hemorrhage may be defined as one which leads to sufficient hemorrhage to cause constitutional symptoms.

There are many reasons given why the blood does not escape:

(a) The blood may be retained behind the placenta owing to firm placental margin.

(b) Blood may be effused between the uterine wall and the fetal membranes.

(c) The chief cause that one actually finds in concealed hemorrhage is that the uterine muscle is enfeebled and flabby by its degeneration from disease. As the blood is poured out, this muscle readily yields and so more blood is poured out. If uterine muscle is healthy, it does not yield and hence blood escapes at the vulva and bleeding ceases. Degeneration of uterine muscle makes hemorrhage fatal.

Symptoms. The fact that the patient does not see any blood, makes symptoms and signs advanced when you are called. She has all symptoms of hemorrhage. She is very white and collapsed. Her pulse is small and rapid. She is thirsty, anxious and restless. The distention of her uterus with blood causes her very severe pain of a tearing nature. When you examine the abdomen you find the uterus is large, round, tense and tender. Concealed accidental hemorrhage is rare and the condition is desperate; treatment is indifferent. Various methods have been advised, such as rupture of membranes or vaginal Cesarian section. Abdominal Cesarian and hysterectomy are hopelessly fatal. I have seen two cases of concealed accidental hemorrhage with fatal results.

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*Read before the King County Medical Society, Seattle, Wash., March 1, 1909.

DIAGNOSIS. When the blood escapes from the vulva you have to diagnose between accidental hemorrhage and placenta previa. This is simple. When there is hemorrhage the internal os is nearly always patent enough to admit one finger. In placenta previa you feel the placenta. If the placenta lies directly over the internal os, you feel its thick, spongy substance between your finger and the presenting part. If it does not do so you feel its edge. You may mistake blood clot for placenta, but not if you press it with your finger, for you can break blood clot by pressure, but not the placenta. If you cannot feel the placenta you treat the case as one of accidental hemorrhage. In revealed, accidental hemorrhage the amount of blood may be slight and, unlike placenta previa, there is no inherent necessity for bleeding to be repeated.

I think in accidental hemorrage it is well to divide the cases into those with labor pains and those without. In the first, the outlook for the mother is favorable but, when bleeding occurs without labor pains, the patient's life is in the greatest danger.

TREATMENT OF ACCIDENTAL HEMMORHAGE. The patient in these cases dies from a loss of fluid, in other words, she dies from collapse, the pathology of which is loss of fluid. The treatment, therefore, resolves itself into: (a) Stopping the bleeding. (b) Treatment of collapse.

Many methods have been devised to stop the bleeding, but probably none are wholly satisfactory. The principal ones are:

(a) Rupture of the membranes. The disadvantage of this is that it leads to prolonged labor, a most undesirable thing when the placenta is partly separated.

(b) Rapid delivery. The os is dilated by the hand, by the Bossi or Frommer dilator, or by the vaginal incision and both child and placenta are quickly delivered. When these methods are used we have shock intensified and danger of sepsis great.

(c) Turning, which is the most valuable treatment in placenta previa by causing pressure of the fetal half breech on the bleeding point, has nothing to recommend it in accidental hemorrhage.

(d) Cesarian section has been adopted by some authorities.

Of the various methods in vogue for the treatment of revealed, accidental hemorrhage, vaginal plugging seems to me the most desirable. There are two classes of cases in which this is not adopted:

(a) When the head is fixed by its largest diameter in the brim and the os is fully or nearly fully dilated. Then put on forceps, deliver the child and either express or manually remove the placenta. Give a hot intra-uterine douche for fear of post partum hemorrhage which not infrequently follows accidental hemorrhage.

(b) When, owing to the presentation of the child and the dilated os, we can bring down either one or two legs and deliver the child rapidly. In the great majority of cases you are called before the os is sufficiently dilated to permit of rapid delivery of the child. In such cases the child is viable and plugging seems advisable, even though hemorrhage is slight.

Expectant treatment is contra-indicated in all cases of hemorrhage. In the various cases that I have plugged and seen plugged, I have never seen the plugging, if properly applied, fail to stop bleeding. There is, however, one word of warning needed, that vaginal plugging causes shock and your patient will not respond to your attempts to relieve it, as well as you might wish, until the plug is removed. If the plug is not rightly and tightly inserted, it does no good and the sign of this will be that blood will ooze through it. If this occur, you must take it out and replug.

How to plug vagina. Pledgets of wool, about the size of the top of a thumb, are boiled in lysol. Lysol acts as a lubricant. Gauze may be used, but it will not plug like small pledgets of cotton. The woman lies either in the left lateral position or on the back, with her hips projecting over the edge of the bed. Use all surgical precautions as regards yourself and patient. Pass catheter so as to make room in your vault. Insert the half of your left hand into vagina and use it as a posterior speculum. Both pull back the perineum and open the orifice of the vagina with it. The finger tips of your left hand reach up to the posterior fornix and are able to hold the first plugs in position. Take one pledget squeezed dry and push it with fingers of right hand well home into the posterior fornix, then into one lateral, next into other lateral fornix and a fourth into the anterior fornix. Continue pushing in one by one until cervix is firmly and securely ringed by pledgets. The ring around the cervix is the foundation of the vaginal plug. If it is not firm it is useless. Then fill the vagina from above downwards until you have filled it to the orifice of the urethra. Put pad over vagina and bandage. Then put on tight binder and pin firm from above downwards.

How does the vaginal plug stop bleeding? Various theories have been advanced. (a) Some have held that the bleeding is stopped by increased intra-uterine pressure and that blood cannot be poured out into a uterus squeezed between a tight binder and a vaginal plug. (b) Others think the plug pressure irritates the cervical ganglia and so excites contraction of the uterus.

The most plausible reason, I think, is that the plug presses on the uterine arteries. The uterine reaches the side of the uterus at the level of the internal os. Whether this explanation is right or not I cannot say. I am sure that the efficiency of the plug depends on the efficiency with which we run the plug towards the uterine arteries.

Having now plugged your vagina and stopped hemorrhage, then treat patient for collapse. Remember the vaginal plug causes shock, which complicates the collapse and renders your treatment less successful than you would wish. I think that a hypodermic of morphia, gr. ¼-½, saves her from the pain the plug causes and the added shock due to pain. The treatment of shock I shall pass, as it varies with the individual operator.

When shall we take out the plug? I think it should be removed within six hours, which is too long if the plug produces much shock. When you remove the plug you may find the os the same size as when you plugged, but when the cervical ring of pledgets is taken away the os widens to full dilatation. The contractions of the uterus that have led to this dilatation are painless, possibly because the plug presses on or paralyses the cervical nerve ganglion. If the os is not sufficiently dilated for the delivery of the child, watch your patient; if more bleeding occurs, replug. Labor is often very rapid, easy and painless. The os is paralysed by pressure, vagina enormously distended by the plug.

If the child is not delivered quickly deliver by forceps or bring down the legs as the case may be. Be prepared for post partum hemorrhage, as it is very likely to occur. A little post partum hemorrhage, following ante partum bleeding, may lead to dangerous results.

Do not wait long for placenta if any bleeding occur between the delivery of the child and that of the placenta. Express or remove by hand and give copious intra-uterine douche. Lastly, remember that the plug leads to maceration of the vaginal epithelium and bleeding makes the patient weak, hence she is rendered more liable to puerperal sepsis, unless great precaution be taken.

PRESENT STATUS OF THE SPIROCHETA PALLIDA*

By A. M. MacWhinnie, M. D.,
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The reasons for bringing this subject to your attention are many, but to me three are paramount: First, the frequency and the dread, justifiable, of the disease caused by it; second, we have a definite etiology and method of diagnosis; third, treatment can now be based upon definite findings.

The frequency with which the specialist and the general practitioner have cases in which the lesions suggest syphilis are very numerous. Indeed, one syphilographer has said, "All men are syphilitic until proven otherwise." There are others who consider every skin lesion to be syphilitic unless proof to the contrary is brought forth, which usually consists of the internal administration of mercury or potassium iodide or possibly a combination of both.

The ulcerations that we see on the tonsils, patches on the buccal surface of the cheek, on the pharyngeal wall or under the tongue, are they syphilitic? It is true that many cases are really the results of syphilitic infection. Often I dare say, (i. e., in 60 per cent. of such patients) a negative history is given. Ask a patient if he has had syphilis and he resents it immediately. Might he not be the object of an infection of which he knows not? Certainly there are quite a few cases of this character, the answer of the patient being honest, so far as he or she knows. Then there is the innocent pimple which comes and disappears sometimes in the course of a few days, so that its presence is long forgotten 'ere the secondaries make themselves manifest.

The methods of inoculation are so varied that many cases are infected of which they know not. This we illustrate by a case of chancre which developed from a bite on the scalp during a quarrel and was not diagnosed until the secondaries appeared; then we see iritis, choroiditis and uveitis with the attending consequent results, enlarged glands, which may be tubercular, headaches, often with vomiting and perhaps associated with optic neuritis. Ulceration of the nasal septum is often met with and the cause which naturally comes to our mind is syphilis. The difficulty in making the diagnosis between an ulceration due to syphilis and that due to the many other causes is such that it is often impossible.

Are these cases to be classed as due to syphilis because they heal under the use of mercury, potassium iodide or a combination of both? Without microscopic examination and the serum test it seems to me to be as gross an injustice as could be cast upon any person. A diagnosis has been made upon suspicion and a stigma cast upon that patient, perhaps justifiable, probably not. He or she has been consigned to a three years course of treatment by mercury, K. I. or some of its modifications and then the case may be discharged with the degree of "A. C." You have added another case of cure to your list and, attributing it to some special form of mercury you have used and as a result, you laud this special drug of yours, when as a matter of fact the case never was syphilitic.

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*Read before the King County Medical Society, Seattle, Wash., April 19, 1909.

Then again we have the cases that get well under other than mercurial treatment and the diagonsis has been made by inspection only, that the lesion is not syphilitic. Numerous are the cases of genuine syphilis that do not do well on mercury and are rapidly made worse. One case in particular, cited by Simon Flexner, regained his health with a decoction that is used in France containing no mercury.

True it is that you may be right in many instances but, in view of the stand that is taken by scientific investigators since 1905, we have but one course to pursue in all cases, examination of the lesion or lesions for the spirocheta pallida, and when we cannot find it after repeated trials then use the Wasserman test or send the case to some person who is proficient and has the facilities for the proper carrying out of these tests. Then and only then have we as physicians treated our patients as they should be.

I recall two cases of ulceration of the tonsil that to me were both of a syphilitic origin.

Mr. S., age 38, apparently in good health was out several nights before on a good time, as he called it, which was followed by a retching and vomiting spell. Several days later his throat felt sore on the right side when he swallowed. He denied any such thing as ever having had an initial sore or pimple and I belive that, in so far as he knew, his answer was honest. The ulceration on the tonsil was 9 mm. x 6 mm. and of a depth of about 4 mm., covered with a dirty greyish exudate which was easily removed; no bleeding.

Dr. X. consulted me for a sore throat with painful deglutition; there was no temperature; he looked unusually white and pale and gave no syphilitic history. The ulceration was 8 x 4 mm. on the right tonsil, a greyish exudate lining the ulceration and easily removed, and so deep that I was in doubt as to whether it extended through the capsule. After cleaning the debris away it could be seen that it was to the capsule proper. Why there was or had not been some hemorrhage I am unable to answer, as it would be natural to expect it in this region, the tonsillar blood supply being at this point.

Both of my cases were examined for the tubercle bacillus, and none were found. They were treated as nonsyphilitic and healed; the first in four weeks and the second in ten days, although being the deeper of the two. Now, were they or were they not of syphilitic origin? Personally I must say that I do not know. In view of the present status of the tests for syphilis and the spirocheta pallida I did both of these cases an injustice, but at that time we did not have a definite eitology.

A case is reported of a physician having a stuffiness of the right nostril and a right sided headache with a temperature for a period of two weeks with chills, malaise, constipation and anorexia. Syphilis was not diagnosed until the rash made its appearance ninety days later, although the consultant was an excellent man.

The discovery of the spirocheta pallida was made by the joint investigations of Hoffman and Schaudin and reported March 3, 1905; later the serum diagnosis was made by Wasserman. Both of these diagnostic methods have been substantiated since their discovery by thousands of competent observers. True it is, there are some who have doubts as to this spirocheta being the cause of syphilis. There are and always will be those who are years in accepting new theories, this being no exception. The spirochetae have been found in all syphilitic lesions from primary chancre, secondary mucous patches, to the gumma, as well as in the blood of such patients and scrapings of the mouth. This is shown by a case of a bride who, on her wedding trip, developed a chancre on her lower lid. This had been moistened by the saliva from the chambermaid in whom was demonstrated the secondaries.

Hoffman considers the S. pallida as a positive method of diagnosis in the primary, while the tertiary will show up better by the Wasserman test. It is to be regretted that so far this germ has not been able to fulfill Koch's law. Until investigations prove otherwise, we must accept the S. pallida as the cause of syphilis. Some method that can be used to detect the S. pallida readily and positively should be used. The staining process of Giemsa or Levaditi are the stains that were first used but the time to prepare and the degree of resistance to any stain has been a drawback.

The dark field of Reichert, in which the living organism is shown readily, is quicker and if need be, can be confirmed by the stained specimens in a few minutes, using the Hasting stain, the average time for this method being five minutes and it has been very satisfactory, in the Johns Hopkins' laboratory. I have been able to show the S. pallida in tissue by means of this stain in the course of several minutes. The differential diagnosis must be made as a rule from the S. refringens and is easily made by this stain, remembering the characteristics of each spirocheta. The coloring of each is distinct from each other, if the proper technic be followed.

411-414 White Bldg.

NORTHWEST MEDICINE
THE JOURNAL
of the
WASHINGTON STATE MEDICAL ASSOCIATION.
Publication Committee: C. H. Thomson, M. D.; C. W. Sharples, M. D.;
L. H. Redon, M. D.

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Published Monthly by the Washington Medical Library Association.

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Editorial and Business Office - Marion Building, Seattle, Wash.

Subscription Price, $2.50 per annum in advance. Single Copies, 25 Cents.
Foreign Countries, $3.00 per annum.

Entered March 14, 1903, at Seattle, Wash., as Second Class Matter, under Act of Congress of March 3, 1879.

VOL. VII. JUNE, 1909. NO. 6

THE JULY MEETING IN SEATTLE.

There is every reason to believe the meeting of the Associations of the Northwest in Seattle, next month, will be one of the most interesting and profitable held in this section. The program contains representatives of all the Associations, who have responded willingly for this occasion. It will be printed and ready for circulation this month, and will appear in our July issue. It should be remembered that business matters will be transacted in the Houses of Delegates or similar bodies for each Association. The secretary for this state has received word from a few county secretaries of the election of delegates. We wish to remind those who have not elected their representatives that this should be attended to at once as all ought to have a part in the business affairs of the Association. No special railroad rates are offered for this meeting other than that prevailing for the Exposition in this Northwest territory, of a fare and a third. A commercial exhibit will be held at the Broadway High School, at time of this meeting, of drugs, books and instruments. A list of exhibitors will be published in our next issue.

GOVERNOR HAY AND THE MEDICAL EXAMINING BOARD.

In his appointment of members of the examining board, Governor Hay has followed a policy so remarkable and unprecedented that there may result embarrassing complications. The difficulty hinges on the disposition of the fees received from the applicants. Section 7, of the new medical practice act, says that these fees "shall be used to defray the expenses and compensation of said board." It has been the custom, in recent years, for the examining board to set aside one-fourth of the fees as a fund to be used in the prosecution of illegal practitioners, then to pay the expenses of the meeting and to distribute the balance among the members of the board for compensation. When one considers the traveling and hotel expenses, a busy physician will be by no means compensated for his expenditure of time and loss of practice during the period of an examination by the receipts from these fees.

The phantom of graft and chicanery has taken such a hold on the mind of Governor Hay that its shadow has extended over this board. No man acquainted with the personnel of recent examining boards for one moment places the least credence in the tales of irregularities and crookedness that have been so persistently circulated by the unsuccessful applicants for license, the falsity of which have been clearly proven.

When offering appointments to physicians in different parts of the state, the Governor has conditioned acceptance on the agreement that, after the expenses of the meeting have been paid from the fees received, the balance shall be turned into the state treasury, which is directly contrary to the above quoted section of the law. Several members of the new board have accepted appointments on this condition. Others who have been approached have declined, at the same time asking Governor Hay by what authority he assumes in substance to ignore the requirements of a statute, made a law of the state by his own signature, and to substitute conditions imposed by himself. He could, with equal authority, require his appointees to agree to pay him a portion of the fees or turn them into a campaign fund or use them for any other purpose he might desire to foster. These terms strongly suggest a graft of the state on the members of this board. Subsequently he offered appointments to others who would agree to devote the receipts to payment of expenses of the meetings, a certain sum to prosecution of illegal practitioners and deposit the balance in the state treasury. These terms have been accepted by some members of the board. Thus the board in reality contains two classes of members, who have accepted different conditions, neither of which is in accordance with the law governing selection of the examiners.

The question at once arises whether a member can legally serve on this board who accepts an appointment on terms not provided in the statute. Suppose an unsuccessful applicant for license is advised that he is not legally prevented from practice on account of the questionable authority of the new board. The courts may be called upon to determine the legal standing of the board and complications may follow, unless this question shall be raised and settled at an early date. If the Governor fears to trust these funds with the medical board or if he thinks they should be compensated by a fixed salary, as has been intimated, the law should have been so amended before receiving his signature. The men who have declined appointment hav not so acted in consequence of the compensation being thus withheld, but on account of this exercise of legislation on the part of the Governor who thus makes himself superior to the law enacted by the legislature. We believe a serious situation has thus arisen for the future working of the medical law and that the chief executive has exercised an unwarranted and unjustifiiable authority which cannot be paralleled in the appointment of state officials.

THE NEWLY APPOINTED BOARD.

The following men compose the State Medical Examining Board of Washington, appointed under the recently passed medical practice act: Regulars, E. P. Witter, Spokane; E. J. Taggart, Bremerton; R. M. Smith, Bellingham; H R. Keylor, Walla Walla; C. E. Keeler, North Yakima; Homeopaths, E. W. Young, Seattle; G. H. Dow, Chehalis; Osteopaths, J. C. McFadden, Seattle; W. T. Thomas, Tacoma. The absence of a regular on the board from Seattle, which contains one-third of the physicians of the state, is probably due to several declining appointment on the conditions previously mentioned. At a meeting held for organization the board elected as president, E. P. Witter; vice-president, E. J. Taggart; secretary, J. C. McFadden; treasurer, G. H. Dow.

This board will meet a new problem in the examination and licensing of osteopaths. Of the large number of men and women seeking public patronage under this designation, it is claimed only a moderate percentage are entitled to recognition by the law; the others being deficient in duration of study and requisite knowledge. Since they have already become established and have doubtless secured a certain kind of following, the board will need to exercise firmness and persistence in bringing them into line. Since experience is an aid in all work, the new board is unfortunate in having no holdover member who has familiarity with board examinations, especially in view of the very large class of applicants expected in the near future.

Those familiar with the past work and responsibilities of the board cannot avoid surprise and criticism at the selection of an osteopath for its first secretary. He is the executive of the board and in the intervals between sessions practically manages its affairs. In other states it is customary to choose for secretary a man long established in practice, familiar with medical affairs of the state and acquainted with the personnel of the profession. This plan has usually been followed in this state. Osteopaths claim not to be physicians, that they have no familiarity with medicine as the term is commonly used. How incongruous it appears then to select one of their number for so important a part in the management of the board that presides over the destinies of the medical profession of this great state. From the first we have endorsed the single board to examine all kinds of practitioners. We believe this plan will best conserve the interests of the medical profession and osteopathy. But so untried and unproved a factor as the osteopaths should occupy a subordinate position on the board, till their position and worth have been proven. The action taken in this case is like appointing the youngest and most inexperienced tutor as the executive officer of a college faculty. To express it mildly, the board has given an exhibition of very poor judgment.

THE TUBERCULOSIS EXHIBIT AT THE EXPOSITION.

For a long time much has been said among those interested in the tuberculosis problem concerning an exhibit to aid in spreading knowledge on this subject among the people of Washington. At last an exhibit has been assembled, through the efforts of Dr. Heg, of the State Board of Health, that is a real credit to this Board and which will prove a feature of the A.-Y.-P. Exposition. It is placed in the balcony of the Forestry Building, where it has abundance of room and a sightly location. Every physician visiting the Exposition should inspect it. Beside a large display of photographs of many institutions, the walls are adorned with many terse epigrams bearing on the tuberculosis question. The attention of visitors is most attracted by the well constructed models which are unexcelled. Steps have been taken toward bringing to the Exposition the traveling exhibit of the National Association which has been an important factor in Eastern States in public education. When a description of this exhibit was recently given to Dr. Farrand, of New York, who is in charge of the National exhibit, he stated it is substantially as complete as the latter and in some respects more so. Some features are yet to be added that will add to its value. When the Exposition closes, it is intended to utilize the exhibit in other cities, wherever it can accomplish the most good.

MEDICAL PRACTICE ACT.

Enacted by the Legislature of the State of Washington, March, 1909.

Be it enacted by the Legislature of the State of Washington:

Section 1. The Governor shall appoint a board of medical examiners to be known as the Board of Medical Examiners of the State of Washington, consisting of nine members, who shall be appointed as follows: Five members from the regular profession, two from the homeopathic profession, and two from the osteopathic profession. The osteophatic members shall be graduates only of a regular osteopathic college. The appointment of each member shall be for a term of three years, and until his successor is appointed and qualified: Provided, That no member shall serve more than two consecutive terms. It shall require the affirmative vote of a majority of the members of said board to carry any motion or resolution, to adopt any rule, to pass any measure, or to authorize the issuance of any certificate as in this act provided.

Sec. 2. Each member of said board shall, before entering upon the duties of his office, take the constitutional oath of office, and shall, in addition, make oath that he is a graduate in medicine and surgery or osteopathy, and a licensed practitioner of medicine and surgery, or of osteopathy, of this state: Providing, That the osteopathic members of the board first appointed under this act shall not have been licensed by any previous examining board of this state. The president and secretary shall be empowered to administer the oath of office.

Sec. 3. Said board shall be organized on or before the second Tuesday of June, 1909, by electing from its members a president, vice-president, secretary and treasurer, who shall hold their respective positions during the pleasure of said board. Said board shall hold its regular meetings on the first Tuesday of January and July of each year, alternating between the eastern and western part of the State of Washington. Special meetings of the board may be held at such time and place as the board may designate.

Sec. 4. Any person who treats the sick or afflicted may register his or her diploma with the board of medical examiners, and receive a license to practice his or her respective mode of treatment, by paying a fee of ten dollars, which fee shall go towards defraying the expenses of said board: Provided, That he or she show evidence satisfactory to said board that he or she has been legally engaged in such practice prior to the passage of this act, in the State of Washington, and is a graduate of a legally incorporated school or college teaching the system or mode of treatment which the applicant intends or claims to follow, wherein the course comprises actual attendance and completion of two years of ten month each, or four terms of five months each, and the curriculum of study includes instruction in the following branches, to-wit: Anatomy, physiology, chemistry and toxicology, bacteriology, gynecology and obstetrics, histology, hygiene, pathology and general diagnosis; or by having been in continuous practice in one locality in this state for the past two years; and all such persons shall be granted thirty days after the organization of said board to make such application and furnish such evidence, after which time all persons desiring to treat the sick shall first take the examination as provided by this law.

It shall be the duty of every holder of a license from the State Board of Medical Examiners to exhibit his or her license to any resident of this state who may request to see the same, and any person refusing or failure so to do, or who shall exhibit any such license as his or her own, in response to such request, when such license has not been issued to him or her, shall be guilty of a misdemeanor.

Sec. 5. Said board may from time to time adopt such rules as may be necessary to enable it to carry into effect the provisions of this act.

Sec. 6. Three forms of certificates shall be issued by said board under the seal thereof, and signed by the president and secretary: First, a certificate authorizing the holder thereof to practice medicine and surgery; second, a certificate authorizing the holder thereof to practice osteopathy; third, a certificate authorizing the holder thereof to practice any other system or mode of treating the sick of afflicted not referred to in this section.

In order to produce a certificate to practice medicine and surgery, the applicant for such certificate must file with said board at least two weeks prior to a regular meeting thereof, satisfactory testimonials of good moral character, and a diploma issued by some legally chartered medical school, the requirements of which shall have been at the time of granting such diploma in no particular less than those prescribed by the Association of American Medical Colleges for that year, or satisfactory evidence of having possessed such diploma, and he must file with such diploma an application sworn to before some person authorized to administer oaths, and attested by the hand and seal of such officer, if he have a seal, stating that he is the person named in said diploma, that he is the lawful holder thereof, and that the same was procured in the regular course of instruction and examination, without fraud or misrepresentation. The said application shall be made upon a blank furnished by said board, and it shall contain such information concerning the medical instruction and the preliminary education of the applicant as said board may by rule provide. Applicants who have failed to meet the requirements must be rejected. Applicants for a certificate to practice osteopathy shall be subject to the above regulation, except that in place of a diploma hereinbefore referred to, they shall be required to file a diploma from a legally chartered college of osteopathy, having a course of instruction of at least twenty months, requiring actual attendance, and after 1909, of three years of nine months each, and including the studies examined upon under this act. Applicants for a certificate to practice any other system or mode of treatment not in this act referred to shall be subject to the above regulations, except that in the place of the diploma thereinbefore referred to, they shall be required to file a diploma from a legally chartered college of the system or mode of treatment which the applicant claims or intends to follow.

In addition to the requirements above set forth, such applicants for a certificate must be personally examined by said board as to their qualifications. The examination shall be conducted in the English language, shall be practical in character and designed to discover the applicant's fitness to practice his profession, and shall be, in whole or in part, in writing on the following fundamental subjects, to-wit: Anatomy, histology, gynecology, pathology, bacteriology, chemistry and toxicology, physiology, obstetrics, general diagnosis and hygiene. Examinations in each subject shall consist of not less than ten questions, none of which shall relate to treatment, answers to which shall be marked upon a scale of zero to ten. But all applicants must obtain not less than sixty per cent. in any one subject: Provided, That applicants who can show at least ten years of reputable practice shall be granted a credit of five per cent. upon the general average, and five per cent. additional for each subsequent ten years of such practice.

The examination papers shall form a part of the records of the board and shall be kept on file by the secretary for a period of one year after each examination. In said examination the applicant shall be known and designated by number only, and the name attached to the number shall be kept secret until after the board has finally voted upon the application.

Sec. 7. Each applicant on making application shall pay the secretary of the board a fee of twenty-five dollars ($25.00), which shall be paid to the treasurer of the board by said secretary and used to defray the expenses and compensation of said board. In case the applant's credentials are insufficient, or in case he does not desire to take the examination, the sum of fifteen dollars ($15.00) will be returned on application.

Sec. 8. Said board shall keep an official record of all its proceedings, a part of which record shall consist of a register of all applicants for certificates under this act, with the result of each application. Said record shall be evidence of all the proceedings of said board which are set forth therein.

Sec. 9. Every person holding a certificate authorizing him to practice medicine and surgery or osteopathy or any other system or mode of treating the sick or afflicted, in this state, must have it recorded in the office of the county clerk of the county in which the holder of said certificate is practicing his profession, and the fact of such recording shall be endorsed on the certificate by the county clerk recording the same. Every such person, on each change of his residence, must have the certificate recorded in the county to which he shall have changed his residence. The absence of such record shall be prima facie evidence of the want of possession of such certificate. And any person holding a certificate to practice medicine and surgery or osteopathy, or any other system or mode of treating the sick or afflicted in this state, or to attempt to practice medicine or surgery or osteopathy, or any other system or mode of treating the sick or afflicted, in this state, without first having filed his certificate with the county clerk as herein provided shall be deemed guilty of a misdemeanor.

Sec. 10. The county clerk shall keep in a book provided for the purpose, a complete list of the certificates recorded by him, with the date of the record; and said book shall be be open to public inspection during his office hours.

Sec. 11. Said board must refuse a certificate to any applicant guilty of unprofessional conduct; but before such refusal the applicant must be cited by citation, signed by the secretary of the board, and sealed with its seal. No such citation shall be issued except upon a sworn complaint filed with the secretary of the board, charging the applicant with having been guilty of unprofessional conduct, and setting forth the particular act constituting such unprofessional conduct. On filing of such complaint the secretary must forthwith issue a citation and make the same returnable at the next regular session of said board, occurring at least thirty days next after filing the complaint. Such citation shall notify the applicant of the time and place when and where the matter of said unprofessional conduct shall be heard, the particular unprofessional conduct with which the applicant is charged and that the applicant shall file his written answer, under oath, within twenty days next after service upon him of said citation, or default will be taken against him, and his application for a cetificate refused. The attendance of witnesses at such hearing shall be compelled by subpoenas issued by the secretary of the board under its seal; and said secretary shall in no case refuse to issue any such subpoena, upon a fee of twenty cents being paid him for each subpoena. Said citation and said subpoena shall be served in accordance with the statutes of this state then in force as to the service of citations and subpoenas generally and all provisions of the statutes of this state then in force relating to subpoenas provided for therein. If any person refuses to obey a subpoena served upon him in accordance with the statutes of this state then in force providing for the manner of serving subpoenas, the fact of such refusal shall be certified by the secretary of said board, under the seal thereof, to the superior court of the county in which the service was had and the said court shall thereupon proceed to hear said matter in accordance with the statutes of this state then in force as to contempt for disobedience of process of the court, and should said court find that the subpoena had been legally served and that the party so served has wilfully disobeyed the same, it shall proceed to impose such penalty as provided in cases of contempt of court. In all cases of alleged unprofessional conduct arising under this act, testimonies of witnesses may be taken, the same as in civil cases, and all the provisions of the statutes of this state then in force as to the taking of testimony are hereby made applicable to the taking of depositions under this act. If the applicant shall fail to file with the secretary of said board his answer, under oath, to the charges made against him, within twenty days after service on him of said citation or within such futher time as the board may give him, and the charges on their face be deemed sufficient by the board, default shall be entered against him and his application refused. If the charges on their face be deemed sufficient by the board, and issue be joined thereon by answer, the board shall proceed to determine the matter, to that end, shall hear such evidence as may be adduced before it; and if it appear to the satisfaction of the board that the applicant is guilty as charged, no certificate shall be issued to him. No certificate shall be refused on the grounds of unprofessional conduct unless the applicant has been guilty of such conduct within two years next preceeding his application. Whenever any holder of a certificate herein provided for is guilty of unprofessional conduct, as the same is defined in this act, and said unprofessional conduct has been brought to the attention of the board granting said certificates, in the manner hereinafter pointed out, or whenever a certificate has been procured by fraud or misrepresentation, or issued by mistake, it shall be their duty to, and they must, revoke the same at once, and the holder of said certificate shall not be permitted to practice medicine and surgery, or osteopathy, or any other system or mode of treating the sick or afflicted in this state. But no such revocation shall be made unless such holder is cited to appear and the same proceedings are had as is hereinbefore provided in this section in case of refusal to issue certificates. Said secretary in all cases or revocation shall enter on his register the fact of such revocation and shall certify the fact of such revocation under the seal of the board, to the county clerk of the counties in which the certificate of the person whose certificate has been revoked is recorded; and said clerk must thereupon write upon the margin or across the face of his register of certificate of such person, the following: "This certificate was revoked on the .... day of ....," giving the day, month and year of revocation in accordance with certification to him by secretary. The record of such revocation so made by said county clerk shall be prima facie evidence of the fact thereof, and of said regularity of all the proceedings of said board in the matter of said revocation. From the time of the revocation of a certificate the holder thereof shall be disqualified from practicing medicine or surgery, osteopathy, or any other system or mode of treating the sick or afflicted, in this state.

The words "unprofessional conduct," as used in this act, are hereby declared to mean:

First. The procuring, or aiding or abetting in procuring a criminal abortion.

Second. The wilfully betraying of a professional secret.

Third. All advertising of medical business which is intended or has a tendency to deceive the public or impose upon credulous or ignorant persons, and so be harmful or injurious to public morals or safety.

Fourth. All advertising of any medicine or of any means whereby the monthly periods of women can be regulated or the menses reestablished if suppressed.

Fifth. Conviction of any offense involving moral turpitude, in which case the record of such conviction shall be conclusive evidence.

Sixth. Habitual intemperance.

Seventh. The personation of another licensed practitioner of a like or different name.

Sec. 12. In any case of the refusal or revocation of a license by said board under the provisions of this act, said board shall file a brief and concise statement of the grounds and reasons for such refusal or revocation in the office of the secretary of said board, which said statement, together with the decision of said board, in writing, shall remain a record in said office.

Sec. 13. In any case of the refusal or revocation of a license by said board under the provisions of this act, the applicant whose application shall be so refused, and the licentiate whose license shall be so revoked by said board, shall have the right to appeal from the decision so refusing or revoking such license within thirty days after the filing of such decision in the office of the secretary of said board, as hereinbefore in this act provided. Such appeal shall be to the superior court in and for the county in which was held the last general meeting of said board, prior to the refusal of such license, in the case of such refusal; and to the superior court in and for the county in which the hearing was had upon which such license was revoked, in case of such revocation. In any case a person desiring to take such appeal shall serve or cause to be served, upon the secretary of said board, a written notice of such appeal, which shall contain a statement of the grounds of such appeal, and shall file in the office of such secretary an appeal bond, with good and sufficient surety, to be approved by said secretary, to the State of Washington, conditioned for the speedy prosecution of such appeal, and the payment of such cost as may be adjudged against him upon such appeal. Said secretary shall within ten (10) days after the service of said notice of appeal, and the filing and approval of said appeal bond, transmit to the clerk of the superior court to which such appeal is taken, a certified copy, under the seal of said board, of the decision of said board, and the grounds thereof in the case of the refusal of the license; and in addition thereto, a certified copy under such seal of the complaint in the case of the revocation of a license, together with the bond and notice of appeal. The clerk of such court shall thereupon docket such appeal causes, and they shall stand for trial in all respects as ordinary civil actions, and like proceedings be had thereon. Upon such appeal said cause shall be tried de novo. Either party may appeal from the judgment of said superior court to the supreme court of the state in like manner as in civil actions within sixty (60) days after the rendition and entry of such judgment in said superior court. If such judgment shall be in favor of the party appealing from the decision of said board, and in case examining board does not appeal from said judgment within said sixty (60) days,then, and in that case, said board shall, at the end of said sixty (60) days, and immediately upon the expiration thereof, issue to such successful party the usual license to practice medicine and surgery in this state, and in addition thereto, shall reinstate upon the records of said board the name of such successful applicant, in case of the revocation of his license by such board. In case of such appeal to the supreme court by said board, no such license shall be issued nor reinstatement be required until the final determination of said cause, and as hereinafter provided. In case the final decision of the supreme court be against said medical examining board, then, and in that case, said court shall make such order in the premises as may be necessary, and said board shall act accordingly: Provided, That in no case shall an appeal bond be required of said board, nor shall any costs be adjudged or taxed against the same.

Sec. 14. Any person who shall practice or attempt to practice, or hold himself out as practicing medicine and surgery, osteopathy, or any other system or mode of treating the sick or afflicted in this state, without having, at the time of so doing, a valid, unrevoked certificate as provided in this act, shall be guilty of a midemeanor. In each such conviction the fine shall be paid, when collected, to the State Treasurer, and shall constitute a special fund for the prosecution of illegal practitioners as defined in this act, the said fund to be paid to the said board upon warrants drawn therefor by its secretary, and the said board is authorized to prosecute all persons guilty of a violation of the provisions of this act.

Sec. 15. Every person filing for record, or attempting to file for record, the certificate issued to another, falsely claiming himself to be the person named in such certificate, or falsely claiming himself to be the person entitled to the same, shall be guilty of a felony, and, upon conviction thereof, shall be subject to such penalties as are provided by the laws of this state for the crime of forgery.

Sec. 16. Any person assuming to act as a member of the State Board of Medical Examiners without so being, or who shall sign, or subscribe, or issue, or cause to be issued, or seal, or cause to be sealed, a certificate authorizing any person to practice medicine or surgery, or osteopathy, or any other system or mode of treating the sick or afflicted, in this state, shall be guilty of a misdemeanor.

Sec. 17. Any person who holds a license from the board of medical examiners heretofore existing, under the provisions of any laws of this state, past or present, shall be entitled to practice medicine and surgery in this state the same as if issued under this act: Provided, however, That all licenses herein mentioned may be revoked for unprofessional conduct, in the same manner and upon the same grounds as if issued under this act.

Sec. 18. All persons granted licenses or certificates under this act, shall be subject to the state municipal regulations relating to the control of contagious diseases, the reporting and certifying to births and deaths, and all matters pertaining to public health; and all such reports shall be accepted as legal.

Sec. 19. Nothing in this act shall be construed as to inhibit service in the case of emergency, or to the domestic administration of family remedies; nor shall this act apply to any commissioned medical officer in the United States army, navy, or marine hospital service, in the discharge of his official duties; nor to any licensed dentist when engaged exclusively in the practice of dentistry; nor shall this act apply to any practitioner from any other state or territory in which he resides: Provided, That such practitioner shall not open an office or appoint a place of meeting patients or receive calls within the limits of this state. Nor shall this act be construed to discriminate against any particular school of medicine or surgery or osteopathy, or any system or mode of treating the sick or afflicted, or to interfere in any way with the practice of religion: Provided, That nothing herein shall be held to apply or to regulate any kind of treatment by prayer.

Sec. 20. All persons receiving a certificate or license under this act shall use no deception in the use of titles of his or her mode of treating the sick, but shall use only such titles as are designated by his or her diploma; or those not having a diploma shall use only such titles as he or she holds license to practice. Any person violating this section of this act shall be guilty of a misdemeanor.

Sec. 21. The words "certificate" and "license" shall be known as interchangeable terms in this act.

Sec. 22. All acts, or parts of acts, in any wise conflicting with the provisions of this act, are hereby repealed.

Sec. 23. An emergency exists and this act shall take effect immediately.

Passed by the House February 19, 1909.
Passed by the Senate March 8, 1909.
Approved March 18, 1909.

REPORTS OF SOCIETY MEETINGS.

KING COUNTY MEDICAL SOCIETY.

President, Grant Calhoun, M. D.; Secretary, L. H. Redon, M. D.

The first regular semi-monthly meeting of the King County Medical Society was held at the medical library, Seattle, May 3, with President Calhoun in the chair.

Clinical Cases.

Gun Shot Wound of the Bladder. A. Peacock presented a man of 26 who received this wound. The bullet entered to the left and at top of coccyx, perforating the intestine and cutting the bladder at the trigone. The wounds were repaired and the patient made a good recovery.

Case for Diagnosis. O. Edwards presened a colored man of 28 with a large fluctuating tumor on right side of neck, of two years growth. Lympathic glands were enlarged. No syphilitic history or general evidence of general tuberculosis. Dr. Browning, of Los Angeles, was introduced and said the case might be tuberculosis as the patient gave a reaction to tuberculin. He described the forms of tuberculin used in the human and bovine types of tuberculosis and suggested that each form be tried on the patient. J. G. Dowling protested against the use of tuberculin when the diagnosis is so much in doubt lest some latent focus be lighted up by it. In view of the size of this noninflammatory tumor, he strongly suspected a cyst. J. C. Dallenbach said the possibility of syhpilis should be considered, even though its history is denied, in view of the glandular involvement. A. P. Lensman said the small area of alopecia is not characteristic of syphilis nor is the epitrochlear enlargement sufficient. He favored a mixed injection with tuberculin as a factor.

Insular Sclerosis. D. A. Nicholson presented a man of 28, a miner. During the past year had lame back, weakness of legs, disturbance of speech, numbness of extremities, general circulation poor, poor coordination of hands, active knee jerks, Babinsky present, ankle clonus demonstrated slight but no rectal disturbance, gait ataxic. Condition probably caused by exposure to cold. Dr. Hawley reported beginning whitening of discs.

Lupus Erythematosus. A. P. Lensman presented a man of 30. Twelve years ago red patches appeared on cheeks. Three years ago diagnosis made of lupus vulgaris and some improvement under X-ray but no bacilli have been found. The pathology of this condition is dilatation of blood vessels, deposition of pigment, predomination of leucocytes. Treatment is often by Paquelin. X-rays improve some cases. In this case was used Hollander's treatment, consisting of internal administration of quinine and local application of iodine and glycerine equal parts. If quinine gives untoward symptoms, the iodides are used. L. N. Redon said he had found liquid air or carbon dioxide snow of value. He said this case was of the typical butterfly type.

Aortic Aneurysm. A. O. Loe presented a man of 30 who complained of pain in epigastrium after heavy lifting one year ago. He mentioned the cardinal symptoms and physical signs of this condition and described those present in this case. H. B. Thomson exhibited and explained a radiograph of the case. H. M. Read thought too many cardinal signs were lacking to justify a diagonsis of aneurysm. In order to make a correct diagnosis the patient should be long under observation and frequent examinations made. E. F. Taake thought the perfect heart sounds excluded a diagnosis of aneurysm.

Astragalo-scaphoid Dislocation. F. J. Fassett presented a man of 31 who weighed 250 pounds who sustained this dislocation by a fall on the feet. Radiographs showed the nature of the injury. In order to correct deformity the tendo Achilles was cut and part of the scaphoid removed. A useful joint was obtained.

J. S. Kulp, J. C. Dallenbach and W. C. Kantner were elected to membership.

The second regular semi-annual meeting was held May 10 with Vice-President R. M. Stith in the chair.

Dr. Phillip M. Jones, of San Francisco, delivered an address on the subject of medical organization and the relations of the medical profession to the public. The doctor is addressing county medical societies and general meetings of the public along these lines.

WHATCOM COUNTY MEDICAL SOCIETY.

President, S. H. Johnson, M. D.; Secretary, J. P. Morrison, M. D.

The regular monthly meeting of the Whatcom County Medical Society was held at the Hotel Baker, Bellingham, May 10, with President Johnson in the chair. This was also the occasion of the annual banquet of the society. About 40 were present, the guests of the occasion being P. W. Willis and C. A. Smith, of Seattle. A very enjoyable part of the evening was devoted to the banquet, after which the program was presented. ,

PAPERS.

The Heart in Stokes-Adams Disease. C. A. Smith read this paper which described the various features of this condition and especially discussed the cardiac disturbances. Cases were described and quoted illustrating different stages of this disease. The condition of heart block was described and the recent theories reviewed as to its causation, with a description of its pathology. The paper was discussed by W. D. Kirkpatrick, W. C. Keyes and U. G. Brier, all of whom added some facts pertaining to this interesting class of cases.

Treatment of Patients Preparatory to and Immediately Following a Surgical Operation. P. W. Willis read this instructive paper, in which were outlined many essential details that should be followed in order to obtain a successful result and to conserve the comfort of the patient. He emphasized that an honest surgeon should be honest with his patient, both as to the need of an operation and as to the probable benefit to be derived. He dwelt on the plan of giving the patient all the water he wishes to drink after the operation instead of the old plan of stinting liquids. The paper was discussed by W. C. Keyes, W. D. Kirkpatrick, A. M. Smith and J. R. Morrison, all of whom commended the views presented and thanked the writer for his timely suggestions.

Under the guidance of President Johnson as toastmaster, responses were given to toasts that were both entertaining and amusing. U. G. Brier, under "Any Old Thing," related some short and laughable stories. C. L. Holt, in response to "Practice in New England States," told how they did it in Maine some forty years ago when the fee for obstetrics was five dollars and for everything except the doctor's fees people paid war prices. W. R. Gray was the dramatic entertainer of the evening, offering several amusing anecdotes and reciting, in an inimitable manner, a French patois poem. Dr. Meredith, of Everson, gave a realistic description of the incidents attending "Country Practice," with a series of very amusing personal experiences, showing that all success in the varied lines of practice is by no means monopolized by the city doctor. P. W. Willis offered some valuable pointers on "Cranking Autos and Shooting Ducks" that were much appreciated by his fellow sufferers of like tastes and experiences. C. A. Smith, relative to the "State Association," mentioned the plans for the July meeting in Seattle, with a reference to the program and visitors from other parts of the country.

The society elected W. C. Keyes as its representative for the House of Delegates at the annual meeting of the State Association, and S. H. Johnson as alternate.

WHITMAN COUNTY MEDICAL SOCIETY.

President, W. B. Palamountain, M. D.; Secretary, J. Earl Else, M. D.

The regular bi-monthly meeting of the Whitman County Medical Society was held in the Masonic Hall, in Palouse, May 17, with President Palamountain in the chair.

Dr. Wm. Dietz, of Colfax, and Dr. J. W. Stevenson, of Palouse, were elected members. J. Earl Else was elected delegate to the state association and W. B. Palamountain alternate.

Five dollars was voted to the Dr. Cook relief expedition and ten dollars to the Carroll fund.

The July meeting, coming so close to the state meeting, it was voted to omit this meeting. The September meeting will be at Colfax, September 20.

Pathologic Specimens.

Dr. Boyd exhibited two speciment, products of abortions, in both of which the amniotic sac was not ruptured. In one the fetus was at the end of the first month, in the other at the end of the fifth.

Papers.

Pleural Effusions. Their Etiology and Treatment. Dr. Harrison in this paper laid considerable stress upon the immediate surgical treatment. The discussion was opened by Dr. Stuht. Dr. Cardwell thought it unwise to remove the fluid in many of these cases as it acted as a splint and was nature's way of treating the lesion. Dr. Palamountain thought it well to wait at first but if not absorbed soon it should be removed.

Bronchial Affections in Children. Dr. Lenty gave an able discussion covering the etiology, pathology, symptoms and treatment. He uses the mustard plaster in a great many cases and gets good results. In the discussion Dr. Stuht said he never used poultices in this class of cases but has made frequent use of the cotton jacket. He relies upon cold as the chief therapeutic agent. Dr. Skaife reported a case where cold very effectually checked cold. Dr. Farnham obtains good results with aconite. Dr. Else cautioned against the use of clay products. He said that, in placing an antiphlogistine plaster upon the chest, the portion upon the anterior surface would weigh at least one pound. This must be lifted with each inspiration and, taking the respiration as thirty per minute, it means that the patient must lift one pound one-half inch 1800 times per hour or, its equivalent, he must lift 1800 pounds one-half inch every hour or about 22 tons in 24 hours. The first indication in these cases is rest and this is defeated by the use of these products. The use of clay products is simply a method of applying heat, which is distinctly contraindicated, as the indication is to reduce temperature if high.

Intestinal Affections in Children. Dr. Douglas McIntyre presented a very interesting paper on this subject.

After the scientific program a banquet was given by the local physicians.

BOOK REVIEWS.

Edited by

KENELM WINSLOW, M. D.

Therapeutics of Radiant Light and Heat and Convective Heat. By Wm. Benham Snow, M. D., Author of "A Manual of Electro-Static Modes of Application, Therapeutics, Radiography, and Radiotherapy," "Currents of High Potential of High and Other Frequencies," Editor of the Journal of Advanced Therapeutics, and late Instructor in Electro-Therapeutics in the New York Post Graduate Medical School. Scientific Authors' Publishing Co., 349 West 57th St., New York. Price $2.00 net.

The writer first considers radiant heat—its sources, as the marine search light, Finsen light, leucodescent light, electric light baths, etc.; then the physiology of radiant light. He does not attribute the therapeutic effects to any mysterious actions, but to heat and hyperemia. In this time of interest in the Bier method it is of value to note that the author compares the two with the result that he apparently proves radiant heat the better—in not causing any mechanical injury and in inducing venous stasis, which he affirms hinders positive chemotaxis. The opposing action of X-rays and radiant heat is shown in a separate chapter, the writer stating and quoting from good authority to the effect that, while radiant heat stimulates nutrition and metabolism, the X-rays inhibit metabolic action and, if carried out to its physiologic limit, destroys tissue. The final chapters are devoted to convective heat, that conveyed by a current of heart particles, as by what we commonly know as dry and moist heat applications. It is here demonstrated that radiant heat has a much more penetrating and extensive action but that convective heat also causes hyperemia and more elimination of waste matter through the greater sweating produced. The electric light cabinet combines the action of both radiant and convective heat, for example. The whole tone of the book is sound and conservative and, while the medical man is always suspicious of works on subjects upon which the seal of the profession has not been formally placed, yet there is not the slightest doubt but these new methods of applying heat have a value not possessed by older methods and that they have come to stay. Therefore it behooves the profession to become posted as soon as possible upon the action, uses and limitations of these methods and for this purpose there is no better book than this one extant, as far as we know, and the physician should procure and peruse it for the practical help he will get out of it.

WINSLOW.

Practical Dietetics, with Reference to Diet in Disease. By Alida Francis Pattee, Graduate, Boston Normal School of Household Arts, Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City, etc. A. F. Pattee, Publisher, Main Office, 134 So. 1st Ave., Mt. Vernon, N. Y. Fifth Edition, 12 mo. cloth, 300 pages. Price, $1.00 net. By Mail, $1.10. C. O. D. $1.25.

This most excellent work has already been reviewed in Northwest Medicine. The publishers announce that this tenth edition comprises an issue of ten thousand volumes. The book has been adopted by the

U. S. and Canadian armies. After some brief preliminary pages on the physiology of nutriment and general remarks on feeding the sick, the first two-thirds of the book is devoted to methods of preparing different articles of diet for the sick—a cook book chiefly of use for nurses, by whom it is now considered the standard authority on the subject. The latter third of the book is given up to the consideration of diet in the various diseases and here the diets are according to leading specialists and following that in use in leading institutions throughout the United States—thus further contributing to give he book a standard character. The work closes with a very admirable index which is rarely to be found in a cook book. As a practical, working guide for the selection and preparation of food for the sick this book is without an equal. WINSLOW.

Bacerial Food Poisoning. A Concise Exposition of the Etiology, Bacteriology, Pathology, Symptomatology, Prophylaxis and Treatment of So-Called Ptomaine Poisoning. By Prof. Dr. A. Dieudonne, Munich. Authorized Translation, edited, with additions, by Dr. Charles Frederick Bolduan, Bacteriologist, Research Laboratory, Department of Health, City of New York. E. B. Treat & Co, 241-243 West 23d Street, New York. 8 vo 128 Pages. Cloth. Prepaid, $1.00 net.

After reading this book certain salient points are impressed upon the mind. First, that food poisoning immediately results from toxins but the toxins are formed by special bacteria and may or may not be made inocuous by cooking. Next, that the specific bacteria are few. Those of the colon type, especially B. paratyphi, are most common and are the cause of poisoning by meat, fish, cheese, ice cream and canned vegetables and the toxin is not destroyed by cooking. The proteus group accounts for poisoning also by meat and vegetables (potatoes), but its effect is rendered nil by cooking. The B. botulinus is the cause of poisoning by sausage, canned and preserved meat and vegetables, it being an anaerobe and producing nervous symptoms, as paralysis of the throat, mydriasis and effects resembling closely atropin poisoning—and not gastrointestinal symptoms which commonly follow the eating of the toxins of the other bacilli. Poisoning by meat, fish, molluscs, cheese, ice cream, potatoes, canned goods and metal in cans are the subjects of separate chapters. The historical side of each topic, the symptoms, causation, prophylaxis and treatment of each form of poisoning, are to be found in each chapter. The book is eminently practical in nature and will prove highly engrossing and valuable to every practising physician. It possesses a very complete bibliographical index, as well as an unusually full general index, and is in all respects a work to be highly commended. WINSLOW.

NORTHWEST MEDICINE

THE JOURNAL OF THE
WASHINGTON STATE MEDICAL ASSOCIATION.

July, 1909

ORIGINAL CONTRIBUTIONS

THE USE OF VACCINES AND SERUMS.*

By C. Stuart Wilson, M. D.,

TACOMA, WASH.

In compiling this paper I have drawn my material from the reports made by scientific men, whose work is of undoubted character. The results obtained depend largely upon three factors, viz.: a careful scientific diagnosis, a careful study of the various preparations and their methods of usage, and the stage of the disease under treatment.

A fundamental principle in judging the results of a new treatment is that the diagnosis must be beyond question. Recent medical literature contains very conflicting reports in regard to the value of the various vaccines and serums. These discrepancies can usually be explained by a mistaken diagnosis, for example, the use of gonococcus vaccine in a tuberculous joint or a streptococcus vaccine in a staphylococcus infection. Again, some workers are characterized by overenthusiastic attitudes towards anything new, and their tendency is to start an investigation with a preconceived idea of their results, thus giving a prejudiced interpretation to the same.

This subject is not a new one except in its development. When diphtheria antitoxin was first discovered, in the early nineties, it was generally hoped by the medical profession that all bacterial diseases could be controlled by antitoxins. The evidence that this was a false hope lies in the fact that, after fifteen years, bacterial therapeutics is still in its infancy. This subject, to be complete, should include tissue serums, such as thyroidectin, etc., cellular serums, such as normal human and animal blood serum, and vegetable serums, such as pollen serums, but I have been forced to exclude all of these with one exception, in my effort to condense the material at hand.

Typhoid Fever. I shall take up this first and show what the use of typhoid vaccine and serum has demonstrated.

Diagnosis. A. Chantemesse, impressed by the ophthalmic tuberculin reaction, decided to use the same principle in the diagnosis of typhoid fever. He treated typhoid cultures with absolute alcohol, dried the precipitate, ground it up into a powder and made a watery solution. A dose, 1/50 mg. of this solution was instilled into the eyes. Marked reddening and profuse lachrymation occurred in about six hours and remained for about twenty-four hours to three days, if the case was positive. In normal subjects just a little reddening occurred and the eye was clear in twenty-four hours. Within twenty-four hours after a guinea pig was inoculated with bacillus Eberth a positive ophthalmic reaction was obtained. If clinical experience proves this test to be reliable, it will be of great help and apparently will give the diagnosis much earlier than either the blood cultures or the Widal test.

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*Read before the Physicians' Study Club, Tacoma, Wash., May 24, 1909.

Before taking up the treatment of typhoid I wish to give you a brief outline of Vaughan's work on this disease, which extends over a period of eight years. Immunity is not produced the same way in all bacterial diseases. He names three different forms.

(1) Antitoxin immunity, that produced by the formation of an antibody by the body against a toxin; this corresponds to Ehrlich's side chain theory.

(2) Phagocytic immunity, increase in the phagocytic activity demonstrated by the cocci.

(3) Lytic immunity, the dissolving or breaking up of the proteid poisons so as to liberate the poisonous and nonpoisonous elements and render the poisonous less poisonous.

As an example of the first type of immunity, the bacillus of diphtheria produces a specific poison which, when in contact with the antitoxin, is neutralized. There is in this process no increase of cellular activity. It is like having a two-armed test tube, one arm containing the poison and the other the antidote. Allowing them to come together results in a neutralization.

The second type of immunity is illustrated by epidemic spinal meningitis. Here the phagocytic activity is immediately increased in the development of immunity. In typhoid neither of these actions takes place. In some diseases more than one type of immunity is acting at once, as in tuberculosis.

Vaughan has been able to chemically split up the typhoid organism into two simpler parts, one of which contains all the poison and the other is nonpoisonous. This same cleavage takes place when the germ is injected into the body. On animals the effect of this poison radical is identical with that of the poison radical of the tubercle bacillus and various proteids, i. e., egg white, etc. On injecting animals with this poisonous radical no antibody is formed. By very slowly increasing the dose a certain degree of tolerance can be obtained, but this is not specific against typhoid, but against all proteid poisons.

The nonpoisonous element is the specific and hereafter will be referred to as the residue. An animal injected with the residue forms a proteolytic ferment which Vaughan designates as a zymogen. When an animal, treated with the residue, is injected with typhoid germs the zymogen splits up the bacteria into the two elements. So the points is, if there is a fatal number of germs present and they are broken up suddenly the body will be destroyed by the poison, but if there is not a sufficient number present to produce death, they will be destroyed and cannot multiply.

From these facts he draws the following conclusions: It will be impossible to produce an antitoxin for typhoid comparable to that for diphtheria, because the germ forms an intracellular endotoxin, *i e.,* the poisonous element, which is liberated only when the germ is destroyed. No efficient antidote is formed or excited against this element, so there results simply a prohibition of the growth of the germs without a neutralization of their poison. The hope lies in the use of the residue, and it can only be used when the germs are not present in such large numbers, *i. e.,* in the first stages of the disease, or in relapse or as a prophylactic.

Treatment. This is naturally divided into prophylactic and the treatment during the course of the disease.

(a) Prophylactic. The results of antityphoid inoculation of the British Army, in India, as reported by Leishmann, is as follows: Incidence among 8,113 noninoculated 174, with a mortality of 42, or per thousand incidence 21.32; mortality, 5.18. Incidence among 2,207 inoculated 15, with a mortality of 3, or per thousand incidence 9:8; mortality, 1:36. Musehold reports from his work about the same results. Sanborn reports his results as showing that typhoid occurs in the inoculated about one-half as often as in the noninoculated. He found that certain cases had the disease although inoculated, which he attributed to the disease having started previous to the inoculation or to a too small dose or to lack of susceptibility.

(b) As a treatment during the disease: Richardson, of Boston, summarized the treatment of 130 enteric fever patients with serum. His conclusions are: (1) Specific therapy confined to the original disease seems to increase the tendency to relapse. (2) By inoculation with Vaughan's nontoxic residue this tendency can largely be overcome. (3) To get the best results the patients must be seen as early as possible in the infection. (4) An early diagnosis is often impossible; hence specific treatment is greatly handicapped. (5) Antityphoid serum is no more effective than residues and filtrates and is far more expensive. (6) Typhoid filtrates may have a powerful effect upon the disease and cause chills or rise in fever, pulse and respiration and followed by a general improvement in the condition. (7) The typhoid residue of Vaughan seems to lengthen the process but renders it milder and is very effective in preventing attacks.

Chantemesse has demonstrated that antityphoid serum raises the opsonic power of the blood in typhoid and is very potent as a therapeutic measure. He hoped that this treatment would do away with the cold baths, but finds these are very useful in combating the reaction caused by the sudden destruction of the bacilli.

Epidemic Spinal Meningitis. To Flexner and his colleagues we owe the antimeningococcus serum obtained from the horse. His first report covered 47 cases, with 79.9 per cent. recoveries and 20.1 per cent. deaths. In these cases the serum was injected directly into the spinal canal, in order to restrain the growth at the site of infection.

Flexner explains the action of the serum in this manner: The serum increases the phagocytic properties of the leucocytes, or makes the meningococcus more susceptible to phagocytic action. Also the power of the phagocyte to prevent the growth of the organism seems to be increased, and the phagocyte detoxicates or renders less active the endotoxin of the organism.

Flexner makes a complete report covering 400 cases, in all of which the diagnosis was confirmed bacteriologically. Seven cases have been excluded from the 400 because the patients did not survive the injections twenty-four hours and it is fair to assume that they did not derive any action from the injection. Previous to this time in the United States all cases in the height of an epidemic had a mortality of 75 per cent. Under the treatment with Flexner's serum the mortality in the 393 cases was 25 per cent.

In regard to age, the best results were obtained between five and ten years, the mortality being 11.4 per cent. The mortality in 22 cases in infants under one year of age was 50 per cent. Robb, of Belfast, treated 21 cases over ten years, with 18 recoveries.

In regard to the time of injection in 361 cases, first three days mortality 16.5 per cent.; fourth to seventh day, 23.8 per cent.; after seventh day, 35 per cent.

Influence of the injection upon the spinal fluid: Very soon after the serum injection is made the organisms rapidly decrease in numbers, leave the fluid part of the exudate and become intracellular.

The organisms also lose their viability in culture, the spinal fluid loses its turbidity and the leucocytes in the peripheral circulation decrease very rapidly, in cases going on to recovery.

Dunn, of Boston, reports 15 cases, of which at this writing 8 have recovered; 5 are still pending, 4 of which will recover and one, a chronic case treated late, is doubtful; 2 chronic cases treated late have died. The most important suggestion is an early diagnosis and an early treatment. All of these cases except one were diagnosed bacteriologically.

Flexner gives the following instructions in the use of the serum:

(1) The serum should be kept in a refrigerator until ready for use and when used should be warmed to the body temperature.

(2) The serum should be injected directly into the spinal canal after the fluid has been withdrawn by lumbar puncture.

(3) The amount of serum for each injection should not exceed 30 cc. It is not essential but is better to withdraw the same amount of fluid as is injected, and the injection should be made slowly.

(4) The injections should be repeated every twenty-four hours for three or four days, or longer.

(5) In general, the earlier in the disease the injections are made the better the results. Therefore, injections should be made when film preparations show intracellular, Gram negative diplococci. If the cultures show later that the disease is not epidemic spinal meningitis, no harm has been done by the injection.

(6) Although the best results have been obtained when the injections have been made early, no case should be considered hopeless.

You must have been struck with the remarkable fact that all reports of the use of this serum are corroborative. Also that this treatment is already on a substantial scientific footing, in spite of the fact that it is only in its second year of use. The reason for this is that the serum is obtainable only through the Rockefeller Institute, and before a physician can obtain it he must convince the Institute that he is a competent bacteriologist or has the cooperation of such. By this control the serum has not been used in some ill defined diseases, but its use has been limited to cases of epidemic spinal meningitis. Thus it has escaped unjustifiable condemnation for inefficiency.

In marked contrast to the rapid strides of Flexner's serum note the fluctuating advance of tuberculin, introduced by Koch about nineteen years ago.

USE OF TUBERCULIN IN THE DIAGNOSIS OF TUBERCULOSIS. There are nearly as many methods of using tuberculin for diagnostic purposes as there are physicians ready to diagnose the cases. It is a valuable aid in diagnosis, but must be used with care, and results interpreted with caution. The reaction is specific and it must be borne in mind that a very insignificant lesion may produce tuberculin hypersensitiveness. The prevalence of such lesions should be fully realized. Hence in the absence of a focal reaction, tuberculin hypersensitiveness must be valuable as only one phase of the clinical picture and our judgment not too much warped by its presence.

Subcutaneous Test. The method of injecting subcutaneously small doses of tuberculin for diagnostic purposes is conceded by all eminent clinicians to be of great value. Its disadvantages are, its use is limited to afebrile or slightly febrile cases, a careful and accurate record of the temperature must be kept four days previous and at least two days subsequent to the injection. The diagnostic signs of the positive reaction are, rise in temperature, general ill feeling and exacerbation of the focal process.

Ophthalmic Test. E. R. Baldwin, of Saranac, N. Y., reports on its use in 137 cases. His conclusions are that, compared to the subcutaneous test, it is a little premature to draw definite conclusions. The prompt reaction in the eye adds to the suspicion when symptoms of tuberculosis are present. No value is to be placed upon the occurrence of a positive reaction in the absence of symptoms. Hamman, of Baltimore, considers that the eye reaction gives results more nearly in accord with clinical experience than any other, with the exception of the subcutaneous. However, it is by no means absolutely certain.

Smithies and Walker report results of 242 cases. In no case where the tubercle bacilli were found did they fail to get a positive reaction. This did not follow in 126 cases affected with diseases other than tuberculosis, or in 74 apparently healthy adults. The test should be repeated two to five times in case a negative results. Their conclusion is that, properly administered, the ophthalmic reaction is quite as valuable to the general practitioner as any of the others and its convenience and rapidity of action certainly commend it.

Cutaneous Test. Wolf-Eissner obtained 94 positive reactions among 192 patients showing no evidence of tuberculosis. He believes that individuals having healed latent tuberculous foci react to the cutaneous test. Hamman thinks that the cutaneous test is too delicate to be of value in diagnosis except the reaction be negative, which it seldom is in adults. König used the cutaneous test in 20 cases of lupus, getting a reaction varying from slight erythema to deep infiltration with lymphangitis. He made examinations of these lesions and believes them to be nontuberculous. Moro, of

Munich, uses a tuberculin inunction, prepared by adding 5 cc. Koch's old tuberculin to 5 gm. wool fat. A positive reaction is the appearance of small papules. He considers this test as accurate as the ophthalmic and far safer.

Henry S. Patterson, working in the Vanderbilt clinic, used the Moro test in 171 cases. As a result of this work he draws the following conclusions: (a) The Moro test is absolutely harmless and simple to use. (b) It is better adapted to use among adults than the von Pirquet test, because it does not produce a reaction so frequently among those clinically free from tuberculosis. (c) It produces a reaction probably about as frequently as the ocular reaction in tuberculous, and in the clinically free cases, but is devoid of the danger incident to the conjunctival test.

Treatment. As you are all familiar with the routine treatment of using serial dilutions, I shall not burden you with this detail. Webb reports 60 cases with very good results and includes many cases cured by this method, which were not arrested by climatic and sanatorium treatment. He used Koch's new tuberculin, the initial dose not over 1/1000 mg. and often not over 1/100,000 mg. His maximum injection was 1/800 mg. The opsonic index was watched to prevent autointoxication.

Uhry has treated 48 patients with Marmorek's serum with the following results: Eleven affected with surgical tuberculosis resulted in 10 cures and one was greatly improved. The remaining 37 were pulmonary cases. Fifteen were of the first stages and 13 were cured; two are improving, twenty-one were well advanced, 3 cured, 10 much improved and 8 died. He considers the serum to be perfectly harmless, even when employed in such large doses as six and a quarter drams. This serum has also been used at the Phipps Institute and they cannot corroborate the reports in any instance. The serum is obtained from asses.

DIPHTHERIA. I shall not go into detail with diphtheria antitoxin serum, but believe that we ought to use it more in the treatment of diphtheretic paralysis. Emmerich and Löwe use the filtrate of bacillus pyocyaneus cultures in conjunction with diphtheria serum. They claim that their filtrate digests the membrane, inhibits the growth of the organism, and neutralizes the toxin. Muhsam has investigated their claims and substantiates most of them.

GONORRHEA. The use of vaccines and serums has been very discouraging in local or acute cases of gonorrhea. In secondary involvements, as in joints, the field is very promising. Torrey reports 98 cases with 80 per cent. cured and 20 per cent. not cured.

Porter reports 8 cases, all cured. Hartwell, of Massachusetts General Hospital, has treated 31 cases, 14 acute and 17 subacute or chronic, all but three obtaining complete motion in the affected joint. Butler and Long recommend the vaccine in vulvo-vaginitis in children and report several cases with flattering results.

In conclusion, I will briefly outline the various serums and vaccines.

SERUMS.

Normal Serum. It was hoped that the normal horse or human serum would furnish the complement necessary for the completion of the process of bacteriolysis and hemolysis, but we were disappointed. The only use of fresh normal serum is in hemmorhagic conditions.

Anthrax. Serum produced by inoculation of asses with vaccines, then with living cultures of increasing virulence. Legge reports 65 cases with two deaths, the rest showing marked improvement in the third day. The serum is not antitoxic but acts through phagocytosis.

Cancer. Doyen's serum prepared from micrococcus neoformans. No good.

Cholera. No effective antiserum.

Bacillary Dysentery. Shiga Kruse type more virulent and produces a better serum. It is both bactericidal and antitoxic. Because of the various types a polyvalent serum offers the best outlook. The mortality rate has been greatly reduced.

Gonorrhea. Serum reports very doubtful, vaccine more hopeful.

Pneumonia. Antipneumonic serum of no therapeutic value.

Tetanus. A powerful prophylatic serum, must be used early.

Diphtheria. Very potent as a prophylactic and as a cure.

Tuberculosis. Marmoreck's serum has some very good reports but is in dispute.

Typhoid. Chantemesse's serum, prepared by inoculation of horses with true typhoid toxin, still in the experimental stage.

VACCINES.

Actinomycosis. Reports of good results. A cure of lung after one year.

Colon Bacillus. Marked improvement of subjective symptoms in the urinary tract. Urine does not clear up.

Cholera. Haffkine states that the incidence of the disease is one-tenth among the inoculated, compared with the uninoculated. Successful only as a prophylactic.

Erysipelas. Shorer treated 37 cases with a polyvalent vaccine of four strains of streptococci, the disease being apparently shortened, but migration or recurrence was not prevented. Ross and Johnson.

of Toronto, claim to have shortened the course, controlled the migration, and lowered the temperature in fifty cases, using a polyvalent serum prepared from various cases.

Gonorrhea. In secondary joint involvement valuable in conjunction with our former methods of treatment.

Plague. Haffkine states among 639,630 uninoculated, 7.7 per cent. occurrences and 4.7 per cent. deaths. Of 186,797 inoculated, 1.8 per cent. occurrences and .4 per cent. deaths.

Pneumonia. Wolf reports 14 cases with three deaths, 27.2 per cent. The mortality in the same epidemic in other cases 40 per cent. Vaccination was followed by a rise in opsonic index and crisis occurred in those cases that recovered in eighteen hours, except one.

Staphylococcus Infection. Very successful in acne, boils, carbuncles and furuncles. Autogenous vaccines are more favorable.

Streptococcus Infections. Very confusing reports because of the many different strains. Autogenous vaccines and early usage best. Local infections do best. Gabritschewsky, a Russian, uses it in scarlet fever, claiming that the mortality has been greatly reduced. Also says the prophylactic inoculation is efficient.

Typhoid. A very promising field but still in the experimental stage.

Tuberculosis. Without doubt a very valuable aid in treatment and diagnosis.

From this review it seems to me that we have a very interesting and valuable development in therapeutics. My final charge is, an early diagnosis, probably through blood cultures, the use of autogenous vaccines and antitoxic serums in prophylactic and curative doses.

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NASAL, NASOPHARYNGEAL AND OROPHARYNGEAL OBSTRUCTIONS WITH ESPECIAL REFERENCE TO CHILDREN.*

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For many years it has seemed to me these little patients have not received adequate attention from parents, teachers and physicians. The average parent is apt to give the matter no thought because the child does not direct his attention nasalward by complaining of pain. While he may observe his child has frequent colds in the head, or snores when sleeping, or breathes through his mouth both by day and night, it does not usually occur to him that these sypmtoms are of any special import, nor that they can be remedied.

As the teacher looks into the faces of her little pupils, she observes many of them have open mouths, or lips slightly parted, short, turned up nose, protruding lips, in many cases a generally stupid expression, and a nasal twang to the voice. She may carry her observations farther and note that these same children are slower and more sluggish mentally than their fellows. Here her observations cease, just on the threshold of a logical conclusion that might mean much to the child.

The physician, in too many instances, has his time and attention occupied by acute diseases and, while observing the characteristic lack of proper facial development, does not direct the parents' attention to the cause of the trouble. Hence it is, that one of the most far reaching and oft times serious handicaps of child life, even to adolescent and adult life, is allowed to go unrecognized or, perhaps, recognized and uncorrected.

The functions of the nasal cavities are: first, respiration; second, regulation of pressure in the middle ear; third, resonation of the voice; and fourth, olfaction.

1. As the air passes through the irregular nasal cavities, it is warmed and moistened by the mucous membrane and lachyrymal secretions, and freed from much dust by the hairs in the vestibule and by the mucous membrane. The respiratory path through the nose is not a fixed one but depends upon the shape of the nostril. The respiratory current being naturally above the lower turbinate, an obstruction of the middle fossa will cause a corresponding degree of discomfort.

2. The nares may properly be considered continuations of the Eustachian tubes, and all nasal obstructions should be considered obstructions of the tubes, the closure, or partial closure of which,

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*Read before the Walla Walla Valley Medical Society, Walla Walla, Wash., results in partial or almost complete deafness.

3. That the quality of the voice depends largely upon the obstruction or nonobstruction of the nose and nasopharynx is a matter of common observation, the natural resonance of the voice being destroyed by any obstruction.

4. Olfaction is reduced or abolished entirely by obstructive disease or suppurative inflammation of the upper nasal cavities or their sinuses.

The functions of the nasopharynx are: first, that of a resonant chamber for voice modification; second, the preparation of moist warm air for the middle ear and lungs; and third, the drainage of the middle ear and nasal cavities. The oropharynx plays an important part in voice production and in deglutition.

Having thus briefly referred to the physiology of the nose and upper pharynx, let us now consider the more common obstructions with their symptoms and effects and with brief reference to their treatment.

ACUTE RHINITIS, or cold in the head, is an acute inflammation of the nasal mucous membrane.

Etiology. Predisposing and exciting causes should be searched for. Acute rhinitis is predisposed by unsanitary surroundings, inherited syphilis or other dyscrasia; by nervous exhaustion, uric acid diathesis, deflected septum, polypi, adenoids and diseased tonsils. Among exciting causes, faulty elimination and auto-intoxication, sudden atmospheric changes, rapid cooling after free perspiration and a microbe laden atmosphere may be mentioned.

Symptoms are familiar to all. I desire only to call your attention to the more or less severe headache and mental dullness that indicate frontal sinus involvement; also the dull soreness, pain on pressure in the canine fossa, the swollen cheek and neuralgia of the face and teeth indicating involvment of the maxillary antrum. When the inflammation extends to the sphenoid and ethmoid cells there is headache, pain about the orbit which will be increased by stooping, photophobia, and pain back of the eyes radiating to the ears. The discharge is of longer duration and of different character.

Treatment of acute rhinitis should first of all secure free elimination, the equalizing of the circulation, depletion of the nasal mucosa and, if possible, the prevention of sinus involvment and chronic rhinitis by prompt and efficient treatment.

SIMPLE CHRONIC RHINITIS is the legitimate successor of frequent and neglected attacks of simple rhinitis. Frequent colds, more or less nasal stenosis with an abundant secretion of mucus are common symptoms.

Treatment should be largely prophylactic. Alkaline antiseptics and astringents followed by camphormenthol in benzoinol form the basis of treatment other than surgical.

HYPERTROPHIC RHINITIS is a chronic inflammation of the nasal mucosa involving especially the lower turbinates. It usually follows repeated attacks of simple rhinitis. The mucous membrane becomes thickened from infiltration and increase of connective tissue elements.

Symptoms are nasal stenosis, loss of resonance of the voice, profuse secretion, crusts, and a tenacious mucus in the naso-pharynx. Conjunctivitis, epiphora and dacryo-cystitis may result from obstruction of the lacrymo-nasal duct. The Eustachian mucous membrane is often involved, producing stenosis and middle ear catarrh.

Treatment. In recent cases medicinal treatment may be of service. When the infiltrate is well organized and, with the connective tissue cells, forms a rather solid existing mass, prompt recourse should be had to surgical measures. Except in rare cases turbinotomy and not tubinectomy should be done.

DEFLECTED SEPTAL CARTILAGE at the anterior naris and collapse of the nasal ala is more esaily diagnosed than any other of the nasal obstructions and yet it is commonly overlooked. Inspection usually shows a sharp abrupt curve in the lower one-third inch of the cartilage, bringing it well across the naris and allowing the ala to form a valve that closes the nostril.

In these cases the greater the effort at nasal respiration the more effectually is the nostril closed. Again there may be faulty formation of the lateral cartilages, or the nares may be congenitally small, or they may be small from lack of use in early life; or from non-use the alae lose tone and the nostrils collapse.

Recently I corrected this condition for a lady aged thirty-eight who had suffered the discomforts of an obstructed nostril since childhood but had not known previously that she could be relieved. Only a few days ago a lady of thirty with a similar condition, who had passed through many surgical hands in many states, was pleased to avail herself of an opportunity of relief when told a painless operation, the wearing of a perforated tube in the nostril at night temporarily, and some breathing exercises would give her a normal nostril. In this condition as well as in all other obstructions, the patient complains of more trouble at night, this being due to lymphatic and venous stasis when in the recumbent posture.

DEFLECTION OF THE SEPTUM usually occurs higher up. *Etiology* of the deflections, in my opinion, should be named in the following order. First, a fall upon the face in infancy; second, mouth breathing from adenoids, producing a narrow upper jaw and high arched palate; third, intra-nasal pressure, such as enlarged turbinates and polypi; fourth, inherited syphilis, heredity, etc.

Symptoms, as given by Kyle, are difficult breathing; frequent attacks of acute coryza; ringing in the ears; catarrh; deafness; epileptic attacks; hay fever, headache; and general debility.

Treatment. In young children the pharynx and naso-pharynx should be freed from obstructions and rendered as nearly normal as possible. The child should then be placed in the hands of a competent dentist who will broaden the superior maxillae and reduce the high arched palate. The foregoing treatment should be carried out at an early age. Time should be the next factor in the treatment. This failing, or the patient coming into our hands at a late and unfavorable date, the submucous resection of the septum, the Asch or some other operation that will restore the normal caliber and circulation to the nose, must be undertaken, bearing in mind that we are dealing with an obstruction of the internal auditory canal.

SPURS may occur on the cartilaginous or bony septum and may be conical in shape or ridge-shaped, extending the entire length of the septum.

Nasal injuries during early life, perichondritis or periostitis are the chief causative factors. The more common symptoms are stenosis, tinitus aurium and progressive deafness. They may also pedispose to attacks of cold in the head, hay fever, headache, asthma and cough. (In cough of obscure origin, I would urge that you not overlook the nose and ear).

The knife, saw or chisel furnishes the best means of removal. The electrocautery should not be used for fear of subsequent ulceration and thickening.

NASAL POLYPI usually spring from the region of the middle turbinates. Chronic nasal catarrh and purulent discharge from the frontal sinus and ethmoid cells are the chief exciting causes.

Symptoms. Nasal obstruction, frequent droppings in the throat, sneezing, frequent colds, hay fever, asthma and other reflexes are observed. In certain positions of the head stenosis may vary. Their presence may be obscured by enlarged turbinates or by a deflected septum. They should be snared from their attachment and the cause, when found, should be removed.

ADENOID GROWTHS are a hyperthrophy of the normal lymphoid structures situated in the vault of the pharynx. This lymphoid tissue should undergo absorption at puberty; however, practically we can demonstrate the presence of adenoids from birth to senility. Hypertrophy of this pharyngeal, or Luschka's tonsil, results from exanthematous infection, recurrent acute corzya, obstructive nasal affections, strumous and lymphatic diatheses and many other causes.

Symptoms. Mouth breathing, especially at night, and altered voice are characteristic symptoms. Persistent nasal discharge, spasmodic croup, enuresis, night terrors, dilatory and criminal inclinations, noisy respirations, the substitution of B and D for P and T and M and N may be observed. The facial expression indicates extreme mental dullness. The eye is lustreless and mouth open; the nose broad and flat at the bridge while short and retreating at the tip. The anterior and posterior nares are undeveloped. The hard palate is high and narrow because the muscular tongue has not kept its place in the roof of the mouth and because the inferior maxilla, instead of being supported by atmospheric pressure, has been suspended by muscles that exert a constant pressure inward. Deprived of the constant pressure of the upper lip, and as a result of the mishapen palate, the upper incisors are pushed forward.

E. A. Bogue, D. D. S., M. D., in the *Journal, A. M. A.,* says, "When irregular teeth and narrow dental arches are found with adenoids, we expect in all cases to find, not only nasal stenosis, but that the irregularity of the teeth is in proportion to the degree of deflection of the nasal septum and diminution of the nasal passages."

A greater or less degree of deafness or earache or a catarrhal or suppurative otitis media is almost always present, due to tubal catarrh or Eustachian obstruction. Follicular hypertrophies high up in the pharyngeal wall are common. Kyle says: "Imperfect development of the body and progressive inanition are common in young children with adenoids and, where they obstruct nasal respiration, there is always a decrease in hemoglobin and red corpuscles."

Ballinger attributes the contracted lateral chest walls and the protruding sternum found in the rachitic to adenoids. He has also attributed deformities, such as bow-legs, to the improper oxygenation of the blood and resultant lowered vitality of the adenoid patient.

A sub-febrile state, in which the child was anemic and a little ailing for months or years, showing continuously or intermittently a slight rise of temperature, which was not influenced by drugs, has resulted from the constant septic infection via adenoids. In Europe and America, bacteriologic examinations of consecutive cases operated upon have shown from eight to thirteen per cent. infected with tubercle bacilli.

That adenoids do mark their victims for mediocrity we can scarce dispute. For *who, in a whole life time, has ever seen one strong intellectual public man with an adenoid face?*

Treatment consists in thorough and careful removal of the vegetations under local or general anesthesia, as may best suit the individual case. The three essentials are: that we operate as soon as obstructive or other symptoms appear; that the operation may be thorough; and that the Eustachian orifices be not injured.

HYPERTROPHY OF THE FAUCIAL TONSILS results either from attacks of inflammation; from a low grade infection; from general lymphatic dyscrasia; or may be observed in infants as a congenital abnormality. In children the hyperplasia is lymphoid and soft, while in adults, the tonsil is fibroid and firm. A cystic degeneration sometimes occurs. Where the tonsils possess many crypts, infection and inflammation are more common. Exanthematous infection often leaves chronic enlargement. Enlarged tonsils are a source of constant annoyance. The sensation of a foreign body in the throat, difficulty of speech and deglutition, frequent nausea from accumulated secretions, the reflex cough, Eustachian and middle ear diseases are all common symptoms.

As a bacterial incubator, the tonsil is unexcelled. That tubercular infection occurs frequently through the tonsil, we cannot question. Bandellier gives details of one hundred cases in which the tonsils were found enlarged, and tuberculous among nine hundred tubercular subjects, tubercles being found in some of the tonsils when on the surface they were apparently sound. Robertson, in two hundred thirty-two consecutive tonsillectomies, found eight per cent. were tuberculous. Goodale cites seven cases of tuberculous adenitis in which he removed the tonsils. Clinical inspection showed very little that was abnormal, but microscopic examination revealed tubercle and giant cells in all of them. In a case of cervical adenitis I have seen an invalid become a strong working girl with an increase of twenty-five pounds and all glandular enlargements disappear within ninety days after extirpation of the tonsils.

That the port of entry in rheumatism is through some part of Waldeyer's ring, usually the faucial tonsil, is generally conceded. That many other infections occur through the tonsil is fairly well established.

Treatment. A tonsil that is frequently inflamed, or is chronically enlarged or diseased, or that has wide open crypts, or that is obviously the source of infection, either local or systemic, should be removed. Any adhesions to the anterior or posterior pillars should be separated and the tonsil snared from its base. For the removal of small embedded tonsils, a thorough dissection is necessary.

In conclusion, we should bear in mind that nasal respiration can be interfered with by one of many causes or by a combination of causes. We should not be content to remove the cause but must insist that the mouth breathing habit be broken up. This can best be done by closing one nostril and breathing forcibly through the other many times each day; by deep breathing through the nostrils; by having the child run a block with the mouth closed, the distance to be increased each day; and by other exercises. And above all, we should insist on the early removal of all obstructions before irreparable damage is done.

THE BROMPTON HOSPITAL AND ITS TREATMENT OF TUBERCULOSIS BY GRADUATED LABOR.

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As most of my time in the last six months has been spent working at the Brompton Hospital for diseases of the chest, I thought that a few words about it might be of interest to some of the readers of Northwest Medicine. This hospital, which was instituted in 1841, is composed of two magnificent set of buildings, one on each side of the street connected by an underground passage. Besides having beds for the accommodation of 350 patients, it contains a spacious outpatient department, lecture room, dispensary, a Röntgen ray apparatus, a mortuary chapel, museum, disinfector and a splendid labratory. In 1904, a sanatorium was established in connection with it.

All kinds of diseases of the chest are treated at this hospital, about 80 per cent. of them being tubercular. An enormous number attend the outdoor department as outpatients, and the cases which offer some hope either of a cure or improvement are selected and given a bed in the hospital. Those suffering from phthisis are, if in a very early stage, sent to the sanatorium as soon as possible. Others are watched and treated as inpatients until they are considered suitable cases for the sanatorium, to which place no hopeless cases are sent.

Among other diseases ones attention is especially called to in London, is the great number of chronic bronchitis with emphysema in young people. They are better in summer, but when winter comes their cough returns. This continues for years until they become chronic invalids, and their life ends at an early age. This chronic bronchitis is in many cases due to the poorly heated houses, as practically all heating is done by fire-places. Bronchiestasis, which Cabot calls that rare disease rarely diagnosed during life, is here very common, resulting in most cases from this chronic bronchitis. Bronchiectasis is treated by creosote vapor baths and, when much fever accompanies the disease, intravenous injections of formaldehyde, 1 in 2,000, is used with some success.

Tuberculin as a diagnostic agent is hardly ever used, although it is employed in treatment, either by mouth or by hypodermic. For diagnosis of tuberculosis the opsonic index is used with good success. The index is taken before and after exercises and if it varies it is considered a sure sign, while if it does not it only means that, if the person has tuberculosis, it is not active. It is of great value in diagnosing a rise of temperature due to T. B. from other fevers. The index is taken morning and evening, when its variation will be inverse to the fever. It is used also in diagnosing certain conditions of the abdomen due to T. B., from troubles due to other causes, but unless it is taken by a competent person who has spent months in perfecting himself with it, it is of little value in diagnosis. In determining doubtful cases of phthisis the x-ray is not of much value, but it is useful in diagnosing mediastinal tumors, abnormalities of the heart and aneurysms, foreign bodies, cervical ribs, and for distinguishing between effusion and thickening of the pleura.

Much could be said about the diagnosis and treatment of different chest diseases at the Brompton hospital but, for fear of taking up too much space and tiring the readers, I will pass on and tell a little about the sanatorium which is under the management of Dr. Paterson. This consists of a fine lot of buildings, arranged so that one does not shade the others. Dr. Paterson thinks they are too substantial, as he expects tuberculosis to be practically stamped out before they become uninhabitable.

The sanatorium is situated on a ridge 400 feet above sea level about 30 miles from London and two miles from Frimley Station. Except on the south, which faces Frimley Common, the grounds are surrounded by fine woods which shelter the institution from north and east winds. It accommodates 150 patients, who are carefully selected from the Brompton hospital and only such cases as are liable to receive some benefit from treatment are admitted. The average stay of a patient is 160 days. If he does not improve in six weeks, he is, as a rule, sent away to give place to one of the many who anxiously are waiting their turn.

The patients receive practically no medicine except an aperient or a tonic when needed. The treatment consists of food, air and graduated labor which causes the patient to become inoculated with his own tuberculin. In this treatment care is taken that the patient does not get an overdose by working too hard. At the same time it is seen to that he does enough work, so as to keep himself properly inoculated. This is determined either by the opsonic index or by clinical observation. A person who sometimes does not improve while he is doing light work often gains markedly on being given harder labor. If the temperature rises to 99°, or the patient experiences headache or loss of appetite, he is given absolute rest for a few days when, as a rule, he can take up his work again, being none the worse, and some even seem to have improved from this extra dose of their own tuberculin.

Sometimes, if a patient is not closely watched, he may greatly over exert himself, when pleurisy is liable to develop, accompanied by a rising temperature and general malaise which may put him back for a long time. If a patient has fever when he arrives at the sanatorium, he is kept at rest until it disappears.

The grades of work and exercise are as follows:

Grade 1. Persons unfit for active exercise makes mops, mats, sews and so forth.

Grade 2. Walking from a half to six miles a day.

Grade 3. Picking up wood, carrying baskets filled with different things that have to be moved, watering plants and so forth.

Grade 4. Using a small shovel, cutting grass edges, hoeing and so forth.

Grade 5. Digging broken ground, mowing grass and so forth.

Grade 6. Trenching, mixing concrete, felling trees and so forth.

The amount of work that a patient can do often depends more on his general condition and resisting power than on the damage done to his lungs. I saw a patient with four lobes affected doing hard work while another, with tubercule bacilli in his sputum, looked very ill and was unable to work, although on examing his chest hardly any physical signs were found .

The diet is liberal and consists of what the English working man with good wages usually provides for himself. Breakfast, as a rule, consists of bacon, oatmeal porridge, bread, butter, coffee or tea; dinner of meat, vegetables, suet or milk pudding; supper of soup, oat-cakes, Cornish pasties or cheese and so forth. The ordinary patient does not get any extra allowance of eggs, and milk is only used in tea, coffee or pudding, the same as in their own homes. Patients who are emaciated are given an extra allowance of milk and eggs if it is thought necessary.

The standard aimed at, as regards nutrition, is to raise the patient's weight to a few pounds above his highest known weight, or to a few pounds above the normal for his own height. Patients who tend to become excessively fat have their diet reduced in quantity.

The opsonic index and clinical observations have proven that graduated labor as a form of medical treatment is of value. The results at the Brompton sanatorium have really been wonderful and have been copied by other institutions. Of course, some of the success that Dr. Paterson has achieved is due to the fact that his cases have been carefully selected, some of them having undergone as much as three months treatment at the Brompton hospital before being sent to the sanatorium.

I visited the tubercular sanatorium, at Ventnor, in the Isle of Wight, where they are also using graduated labor. The results are not quite so good as at the Brompton, due no doubt to the more unfavorable cases that are sent there. Still it is regarded as of value. One thing is certain, that a patient who has undergone this mode of treatment is not so subject to relapse, as those who have been treated otherwise, and Dr. Paterson, who is in correspondence with his discharged cases, says that if the patient only can get work, so that he can earn enough to secure decent lodging and plenty of good plain food, he as a rule is safe.

This system also greatly reduces the cost of running a sanatorium, while the patient is made physically fit to return to the work or trade on which he depends for his subsistence, and he is healed in the same climate where he has to earn his living. These are points of great importance. Some of these patients have been drunken and lazy and they here get used to hard work and hygienic mode of living. They are told on leaving that work and a decent life stands between them and death, and this scum of the earth often become industrious and respectable. The reasons for working is explained to them, and they are all anxious for it. I have never seen such a jolly, happy and contented lot of human beings in one spot as I saw at this sanatorium. To some extent it is due to the non-admittance of hopeless cases who often cast a gloom over others.

The tuberculosis crusade is carried on very enthusiastically in England, Scotland and Wales, and the death rate is said to have been reduced to one-third of what it was 60 years ago. So, if like progress is made in the next 30 years, phthisis would be practically stamped out. Ireland has not kept pace in this, and tuberculosis is said to be on an increase there. There are some reasons for this. The poetical and emotional temperament of the Irish badly fits them for fighting such a disease, and they are liable to become gloomy and discouraged, when a cure is not quickly effected. The hygienic conditions of the peasants and poorer classes are also bad, and many will not undergo a course of treatment or go to a sanatorium, as they consider their cases hopeless. The clergy have now become interested in stamping out tuberculosis and their cooperation with the doctors gives hope that great things may be accomplished.

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SUGGESTIONS IN THE USE OF WATER CYSTOSCOPES.

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While much has been written on cystoscopy in the last few years, of its invaluable aid in diagnosing vesicle, ureteral and renal lesions and describing the many different makes of instruments now on the market, little has been told of how to use these instruments and get the most out of them. Many try the cystoscopy once or twice with indifferent success and then abandon this simple operation to the genito-urinary specialist.

A brief reference to the normal anatomy of the male will clear up many hazy ideas. As the average examination is made with the patient lying flat upon his back and the hips very slightly elevated, let us consider the anatomic relations with the patient in this position.

Starting at the meatus, we have a flexible, elastic tube capable of being displaced in any direction until the instrument has reached the urethral orifice of the triangular ligament which, of course, is firmly fixed and does not allow of displacement. Passing through this orifice we come to the compressor urethrae muscle which assists in expelling urine and semen. The membranous urethra lies between the two layers of the triangular ligament, extending from the apex of the prostate to the bulb of the penis, being about one inch long. This portion of the urethra is the smallest and least dilatable; it is separated from the rectum by the compressor urethrae muscle, Cowper's glands, the deep layer of the triangular ligament and the levator ani muscle. A straight tube (as a cystoscope) being passed in a patient in the dorsal recumbent position, the urethra will be almost horizontal, the outer end of the instrument being slightly elevated.

The bladder itself lies just behind the pubic bones and in the male is against the rectum. Under distention, it is divided into a summit, a body, base and neck. The summit is displaced upward and moves with abdominal respiration; the sides of the body are also movable, being covered with peritoneum on the outside. The base in the male rests on the rectum and in the female on the uterus and upper portion of the vagira; it is broad when the organ is full and slightly narrowed when empty; the base includes that part known as the trigone. The neck is the portion of the outlet embraced by the prostate and continuous with the urethra.

The ureteral orifices are found at the posterior angles of the trigone, four cm. from the internal end of the urethra; they are about five cm. apart, being connected by a distinct ridge or fold, the interureteral ligament.

In catheterizing the ureters it will be well to remember the changing course of these tubes as they receive the catheter. Starting at the orifice, they pass obliquely through the bladder wall for two cm., hug the bladder for five cm. more, then follow the curve of the pelvis upward and backward, leaving the pelvis at the bifurcation of the common iliac artery and ascend almost in a straight line to the kidney pelvis.

In the female, we have a much shorter urethra and one that is practically straight. The bladder base is much broader and, unless the organ is well distended, the ureteral orifices lie very flat. The female ureter, after leaving the bladder, lies on the anterior portion of the upper vagina, passes backward within one cm. of the cervix uteri, runs through the venous plexus of the uterine artery, then under and behind the broad ligament to the brim of the pelvis.

For brevity's sake, only two water instruments will be mentioned, the latest models of the irrigating Nitze (Bürger's and Pilcher's) and the F. Tilden Brown. Both of these allow of continuous irrigation of the bladder, without removing any part of the cystoscope. With the Nitze only an indirect view is obtainable; with the Brown, we can have both direct and indirect, by simply changing the objectives. While the direct view is applicable to nearly every case, it is a mechanical impossibility to bring into range all of the bladder wall, even in normal cases; while in displacements of the vesical wall, secondary to changes in the size and shape of the prostate, to contractions of the bladder, to cystocele and to malpositions of the female pelvic viscera, we can only get a complete picture by means of a reflecting prism. As to catheterizing, in many of these conditions the ureteral openings are considerably displaced, being lifted upward and apparently around the edge of the interureteral fold. In these cases the instrument must be brought just above the opening and the catheter directed downward, it being simply impossible to guide a catheter into such a placed ureter with a straight tube.

The instruments are removed from their case, the cord attached and the lamp set to the proper brilliance; the instruments and catheters are placed in 10 per cent. formalin or 5 per cent. carbolic acid solution for ten minutes. While they are being sterilized the reservoir is filled with cold sterile water and the patient placed on the table in the lithotomy position, with the legs in stirrups or simply with the heels resting on the table, knees flexed and widely separated. In this latter position there is no tension on the triangular ligament. In the male no local anesthesia is necessary, but a sound, of at least the same caliber as the cystoscope, should be first inserted to accustom the patient to an instrumentation and to ascertain the condition of the urethra. In the female the meatus should be cocainized with a 5 per cent. solution on an applicator.

The meatus is wiped off with bichloride or lysol solution; the cystoscope is freed of the antiseptic solution by immersing it in sterile water and then placing it in a vessel of sterile glycerine. The beak of the cystoscope is then inserted in the meatus and very slowly allowed to find its way along the urethra until the sphincter urethrae muscle is encountered. Very gentle traction is made in a downward direction and the instrument can be felt slipping in a quarter of an inch at a time. The patient can help a lot by relaxing as much as possible, especially the muscles of the abdominal wall. If we try to force the cystoscope we only increase the spasm at the cut-off muscle. Suddenly we miss the resistance and we know that the beak of the instrument has entered the bladder. The obdurator (in the direct instrument) is now withdrawn, the irrigation connected and the bladder washed out. We now insert either the large objective or the catheterizing objective.

First the ureteral openings are located as our chief landmarks. This is easily done by inserting the cystoscope just to the interureteral fold and moving it first to the right and then to the left. With the direct view they will seem quite flat and the bladder must be well distended in order to bring them into view. After noting the condition and the functional activity or catheterizing the ureters, the fundus is examined, sweeping the eye over every portion of the wall. With the indirect scope we bring the prism or lens directly over the openings, instead of bringing them into line. With the indirect we must not have over 150 cc. of fluid in the bladder as the wall will be too far away to reflect a distinct picture; it is always a less brilliant image than the direct view gives.

Anesthesia is only desirable when the patient is so nervous, that involuntary contractions of the bladder cannot be controlled. A point about catheters: They should be of fair size, five or six mm. with olive tip ends. If too small the urine escapes past the eye. The stiff blunt pointed catheters are apt to cause trauma and bleeding of the ureteral mucous membrane, in traversing the various curves of the ureter along the sacrum and over the brim of the pelvis. The soft flexible olive point is much to be preferred for nothing is more annoying than blood in the catheterized specimen due to trauma. In tight spasmodic ureters, just after the catheter has been inserted, five or ten cc. of sterile glycerine may be forced through the catheter with an aspirating syringe. Combine these few suggestions with gentleness throughout and cystoscopy will be found an operation easy to perform and not at all relegated to the specialist.

563 Empire Building.

NORTHWEST MEDICINE

THE JOURNAL
of the
WASHINGTON STATE MEDICAL ASSOCIATION.
Publication Committee: C. H. Thomson, M. D.; C. W. Sharples, M. D.;
L. H. Redon, M. D.

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Published Monthly by the Washington Medical Library Association.
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GRANT CALHOUN, M. D.
C. W. SHARPLES, M. D.
J. H. LYONS, M. D.
Editorial and Business Office - Marion Building, Seattle, Wash.

Subscription Price, $2.50 per annum in advance. Single Copies, 25 Cents.
Foreign Countries, $3.00 per annum.

Entered March 14, 1903, at Seattle, Wash., as Second Class Matter, under Act of Congress of March 3, 1879.

VOL. VII. JULY, 1909. NO. 7

THE FIRST MEETING OF THE MEDICAL ASSOCIATION OF THE PACIFIC NORTHWEST WILL BE HELD IN SEATTLE, JULY 20-23.

SOME FEATURES OF THE SEATTLE MEETING.

The program, published elsewhere in this issue, will indicate the character of the papers to be read at the Seattle meeting. It is hoped that a full attendance will be present on the first day, to assure which was one reason for making the program of the first afternoon especially interesting by including addresses of our visitors from the East, Drs. James B. Herrick, of Chicago, and Roswell Park, of Buffalo. The morning will be devoted to meetings of the Houses of Delegates or other executive bodies, as well as to general registration and other preliminary business.

Special attention is called to the meeting of secretaries of county societies, to be held in the evening of July 20, to which are also invited secretaries from other states than Washington. The object is to thus bring the county societies into closer relationship and develop more of a community of interests than has hitherto existed. A program of interest has been provided.

At this time will be held the annual meeting of the Washington Association for the Prevention and Relief of Tuberculosis, which will follow the Session on Tuberculosis, in the afternoon of July 22.

The meeting of the Washington State Association of Health

Officers will take place in Seattle at this time, the official announcement and program of which will be mailed within a few days to all health officials in the state. The first meeting, held in Seattle Dec. 12, 1908, was attended by many of the leading health officers of the Northwest. A permanent organization was at that time effected, and the following officers elected: President, J. E. Crichton, Seattle; Secretary, Mr. A. A. Braymer, Seattle; Treasurer, Dr. J. F. Leslie, Waterville. It was decided to hold the next meeting at the time of the meeting of the Medical Associations of the great Northwest. It was believed it would be possible to make a rousing success of the meeting of the health officers, of benefit not only to themselves but to the people of the state.

The entertainment of the visiting physicians and their wives, provided by the King County Medical Society, will include a reception and tea for visiting wives at the Sorrento, on the afternoon of the 20th, when the wives of members of the above society will act as hostesses. The afternoon and evening of the 21st will be Medical Day at the exposition. The New York State building, the club house of the fair grounds, will be at the disposal of the doctors, with the usual club privileges. The caterer will serve the best dinner to be obtained on the grounds. In the evening a reception and dance will be held at the stately and beautiful Washington State building. Special medical fireworks will be exhibited at foot of the Pay Streak. In the afternoon of the 22d an excursion will be given to those who wish to visit the Puget Sound Navy Yard, at Bremerton, where they will have the freedom of the yard. The Medical Women's Club, of Seattle, will also give a luncheon to the visiting lady physicians, at the Sorrento, on the 22d.

THE COMMERCIAL EXHIBIT.

Many of the large medical meetings in Eastern states make a feature of the commercial exhibit which has proven mutually profitable. Our great distance from commercial centers places us at a disadvantage in this respect, but an effort has been made to assemble something of interest in this line. The following well-known firms have engaged space at this writing and others are expected to be added later. We commend them to the consideration of our readers:

P. Blakiston's Son & Company will have on hand a number of their newer books, as well as recent editions of their standard publications.

Lea & Febiger, of Philadelphia, will make a nice display, of which "Osler's Modern Medicine" will occupy a prominent place.

Wm. Wood & Co. will be represented by Mr. N. C. Titus, who will have on exhibition a good supply of their well known and recent publications.

D. Appleton & Co., of New York, will have a display of books under the charge of Mr. N. W. Akers.

The Chas. H. Phillips Chemical Co. will be represented by Dr. F. R. Rich. This company manufactures the well known Phillips Milk of Magnesia, and other products.

The American Apothecaries Co., of New York, is represented by Mr. E. J. Gozzett, and will exhibit the following pharmaceutical specialties: Salvitae, Lithadonis, Ambrozoin and Carbo-Papanad.

The Abbott Alkaloidal Company will be represented by Mr. George Eder, who will distribute samples and literature.

John Carle & Sons, manufacturers of Imperial Granum, will have a prominent place in the exhibition hall under the supervision of Mr. G. F. Wilcox.

Borden's Malted Milk will be demonstrated by their representative, Dr. C. W. Shepard.

Horlick's Malted Milk, through their representative, A. L. Bailhache, will be demonstrated and ice cream served at their booth.

Mellin's Food Company, of Boston, will be represented by Dr. Wm. S. Wallace, who will present the merits of this well-known product.

E. Fougera & Co. will have a representative present to exhibit their products.

THE PURPOSE AND WORKING OF THE NEW MEDICAL LAW.

A misconception appears to exist on the part of some physicians as to the object of the medical act. The reason for the existence of any medical law is not to promote the interests of the medical profession but to protect the public from incompetent and fraudulent practitioners, and to confer a license on all who treat the sick in order that they may be thus subject to legal control. This license carries no medical degree and recognizes nobody as a physician who is not one already. The immediate cause for the passage of this new law was to place under legal control osteopaths and the various freak practitioners who have hitherto openly treated the sick with no restrictions whatever. None have been more earnest in working for this end than the educated and best qualified osteopaths.

No newly established law can be retroactive. Therefore, this act defines the conditions under which existing osteopaths can obtain a license to practise osteopathy, if they have fulfilled certain legal qualifications. The clause in the law which has excited the greatest discussion is that which states, after defining the qualifications necessary to obtain a license, "or by having been in continuous practice in one locality in this state for the past two years." The interpretation of this clause, and that which will be followed by the examining board, is that it refers only to those who have met the legal requirements for the period of two years which have been specified in the preceding paragraphs.

The newly appointed board, organized June first, elected officers and did such preliminary work as was necessary for the first semiannual meeting, among other measures arranging its finances by the adoption of a per diem and a mileage to cover actual expenses; and further voted that, after paying the legitimate expenses of the board in the transaction of its business, the remaining money be placed in a special fund created by Sec. 14 of the new law, in the hands of the state treasurer, subject to its order for the prosecution of illegal practitioners. The first examination under the new law was held in Seattle, July 6-8. A commendable act of the examining board consisted in its remaining in session till all papers were examined and marked, so that all applicants might know their fate at once instead of waiting several weeks for the returns.

The total number of applicants was 449, of whom 113 were candidates for examination. One dropped out the first day, leaving 112 who finished the examination. All who held the degree of M. D., but had been practising illegally in this state, were refused licenses because they had not complied with the requirements of the law, having been in illegal practice. Of the 112 applicants examined, 76 were successful, giving 32 per cent. of rejections, a little more than the average under previous boards.

The number of osteopaths granted licenses according to the terms of the law was 178. The remaining applicants who were refused a license, 159 in number, received this treatment for the following reasons: Rejected for registration, not legally qualified, convicted of illegal practice, no diploma, course of study did not meet requirements of law, application incomplete, did not like examination and asked for refund of $15, mutilated diploma, diploma showing no evidence of incorporation of school, no letters attesting to moral character, had not practised in past two years in one locality, not in state long enough, application not in accord with qualifications.

Further action was taken to the effect that a register be published for distribution among the profession of this state, naming the applicants who were passed by the board, to whom certificates were issued, and who are qualified to practise as provided by the certificates granted. The purpose of the board is not to work a hardship upon any individual but, at the same time for the best interests of the public, to do those things that abide by the law. Consideration of the above facts, we believe, will have the effect of placing confidence in the work of the new board, on the part of any who may have looked with doubt upon the law or its new officials.

POLITICS IN THE AMERICAN MEDICAL ASSOCIATION.

A crisis in the management of the American Medical Association was not reached at the Atlantic City meeting, despite the efforts and intentions of the insurgents. Speaker Reed, of the American House of Representatives, in March, 1889, said: "It so happens that the noise made by a small and loud minority in the wrong is too often mistaken for the voice of the people and the voice of God." The Republican form of government yet obtains and will be continued for a year at least, although the alleged ring still controls. It has been judged by its fruits which are patent to all. Briefly, the cleaning of the augean stables, otherwise the exposition of the proprietary interests, the welding together of the whole of the profession and the enormous success of the Journal of the American Medical Association, the world's leader in medical literature, are the results of the present management. "By their deeds ye shall know them." True, this has been achieved by dictatorial and in some instances demagogic methods. Some heads had to fall and there are some that are sore and some would have had the work accomplished in a different manner and by other hands. But where is the timber, where the self-sacrificing and competent men, where and by what methods could we be further amalgamated and the interests of our association and the individual member better cared for than under the present management? Methods are sometimes esteemed bad because the critics are not in control, but if the same critics were in control, similar methods would, no doubt, be deemed acceptable.

Turly, the "reformed Magdalen" may make a better servant than the sour and disappointed misanthrope. At any rate, the former may be kept in her place and not permitted to run the household. Good crops come from the inundation of mud left by the overflow of the Nile; such is to be expected from the recent attacks on the management of the Association. The servant has been shown her place and, as the duties are now so heavy and the responsibility so much greater, the result will probably be that the secretaryship will be disassociated from that of the editor and the good work allowed to go on.

THE FIRST MEETING OF THE MEDICAL ASSOCIATIONS OF THE PACIFIC NORTHWEST.

Including those of British Columbia, Idaho, Oregon and Washington.
Held at Seattle, Washington, July 20-21-22-23, A. D. 1909.

OFFICERS OF ASSOCIATION FOR 1908-1909.

BRITISH COLUMBIA MEDICAL ASSOCIATION.

President, C. J. Fagan, Victoria; vice-president, I. Glen Campbell, Vancouver; treasurer, J. D. Helmcken, Victoria; secretary, R. Eden Walker, New Westminster.

IDAHO STATE MEDICAL ASSOCIATION.

President, J. L. Stewart, Boise; vice-president, G. H. Coulthard, Idaho Falls; secretary-treasurer, E. E. Maxey, Boise.

OREGON STATE MEDICAL ASSOCIATION.

President, W. H. Byrd, Salem; first vice-president, Wm. Kuykendall, Eugene; second vice-president, C. S. White, Portland; third vice-president, R. C. Yenney, Portland; treasurer, Edna Timms, Portland; secretary, Wm. House, Portland; delegate to A. M. A., A. C. Smith, Portland; alternate delegate, W. T. Williamson, Portland.

WASHINGTON STATE MEDICAL ASSOCIATION.

President, C. A. Smith, Seattle; first vice-president, Y. C. Blalock, Walla Walla; second vice-president, W. D. Kirkpatrick, Bellingham; secretary, C. H. Thomson, Seattle; treasurer, L. L. Love, Tacoma; delegate to A. M. A., J. R. Yocom, Tacoma; alternate delegate, J. G. Cunningham, Spokane.

ANNOUNCEMENTS.

This meeting is the first session of the Medical Associations of the Pacific Northwest. It is the 10th annual meeting of the British Columbia Medical Association; the 17th of the Idaho State Medical Association; the 20th of the Washington State Medical Association, and the 35th of the Oregon State Medical Association.

The Program Committee (composed of the President and Secretary of each of the above Associations) have adopted the following regulations for this meeting:

"The order of the program will be strictly adhered to. Papers must be delivered when called for or they will be passed.

"No paper shall occupy more than twenty minutes in its delivery, and no member shall speak longer than five minutes or more than once on any subject.

"All papers read before this meeting shall be considered the property of the Program Committee—this committee representing the several Associations holding the meeting."

On account of the A.-Y.-P Exposition the railroads are making an open rate of one and one-third fare for the round trip for all points in the Northwest.

Visiting physicians are respectfully requested to register at the Broadway High School as soon after arrival in town as it is convenient for them to do so.

PROGRAM.

BUSINESS SESSIONS.

July 20, 1909, 10 A. M.

Room A—British Columbia Medical Association—Executive meeting.

Room B—Council of the Idaho State Medical Association—Executive meeting. Following the meeting of the Council there will be a meeting of the members of the Idaho Association for the election of officers, fixing the time and place of next annual meeting, etc.

Room C—House of Delegates of the Oregon State Medical Association.

Room D—House of Delegates of the Washington State Medical Association.

Other business sessions will be had at the convenience of each separate Association.

GENERAL SESSION.

July 20, 1909, 2 P. M.

General Assembly Hall.

Chairman, Dr. C. A. Smith, Seattle, Washington; Secretary, Dr. C. H. Thomson, Seattle, Washington.

Opening Address—Hon. M. E. Hay, Governor of State of Washington.

Welcome in Behalf of City—Hon. John F. Miller, Mayor of City of Seattle.

Response on Behalf of Oregon—Dr. S. E. Josephi.

Response on Behalf of British Columbia—Dr. R. Eden Walker.

Response on Behalf of Idaho—Dr. R. L. McCalla.

Response on Behalf of Washington—Dr. Wilson Johnston.

Address on General Infections and Metastatic Lesions Due to Gonococci—Dr. James B. Herrick, Chicago, Ill.

Address on the Relation of Internal Secretions to Surgical Diseases—Dr. Roswell Park, Buffalo, N. Y.

Address on the State Care of the Insane—Judge A. W. Frater, of the Superior Court of King County.

Address by the Presidents of the British Columbia, Idaho, Oregon and Washington State Medical Associations.

Announcements and other business.

MEETING OF COUNTY SECRETARIES.

July 20, 1909, 8 P. M.

Meeting Place of Surgical Section.

This meeting was intended primarily for the secretaries of the county associations comprising the Washington State Medical Association, but secretaries of county societies in other states are welcome and are urged to attend, as an interesting and instructive program is being arranged for.

SECTION ON SURGERY.

July 21, 1909, 9:30 A. M.—1:30 P. M.

Chairman, Dr. W. H. Byrd, Salem, Oregon; Secretary, Dr. William House, Portland, Oregon.

1 **The General Treatment of Wounds**—Dr. F. E. Tucker, Portland, Oregon.

Abstract—

Character of wounds in general. Progress of repair. Wounds of skin surfaces of great practical importance to surgeons. Dangers of infection. Nature's own method of resisting infection. The role of the leucocyte. Experiments showing the effect of the use of various antiseptic solutions. The aim of the surgeon.

Discussion opened by Dr. S. W. Mowers, Tacoma, Washington, and Dr. Octavius Weld, Vancouver, British Columbia.

2 **Etiology of Gallbladder Infections**—Dr. J. Earle Else, Pullman, Washington.

Abstract—

Review of literature. Report of animal experiments. Conclusions.

Discussion opened by Dr. J. A. Fulton, Astoria, Oregon, and Dr. S. H. Johnston, Bellingham, Washington.

3 **Surgical Diseases of the Gallbladder**—Dr. A. A. Higgs, Gooding, Idaho.

Discussion opened by Dr. A. E. Rocky, Portland, Oregon, and Dr. E. O. Jones, Seattle, Washington.

4 **Interesting Cases of Injury to the Knee and Ankle Joints**—Dr. O. M. Jones, Victoria, B. C.

Abstract—

Internal disarrangement of the knee joint—their diagnosis and treatment. Treatment of acute septic arthritis of knee joint. Cases of Pott's fracture united in faulty position.

Discussion opened by Dr. J. R. Numbers, Weiser, Idaho, and Dr. F. J. Fassett, Seattle, Washington.

5 **Exigencies of Appendicitis**—Dr. L. P. McCalla, Boise, Idaho.

Abstract—

The difficulty in making the diagnosis in many cases. The uncertain prognosis in all cases. Immediate and subsequent treatment. Treatment of those cases in which a positive diagnosis cannot be made. The best methods of handling severe cases.

Discussion opened by Dr. E. A. Sommers, Oregon City, Oregon, and Dr. W. H. Axtell, Bellingham, Wasshington.

JULY 22, 1909, 9:30 A. M.—1:30 P. M.

Chairman, Dr. J. L. Stewart, Boise, Idaho; Secretary, Dr. William House, Portland, Oregon.

6 **Conservatism in Surgery**—Dr. Henry B. Luhn, Spokane, Washington.

Abstract—

Refers to theme as progressive and up-to-date, but tempered with care and conscientiousness. Criticism of reckless and not qualified surgeons who operate by abusing the patient's confidence. Denouncement of the growing practice of fee splitting and boosting. Conservative as opposed to progressive methods in the care of chronic conditions.

A plea to surgeons to know each other better, to work in harmony, not to criticise each other to the laity and to encourage higher ideals in their profession and a greater respect by the laity for the profession.

Discussion opened by Dr. J. R. Yocom, Tacoma, Washington, and Dr. G. F. Wilson, Portland, Oregon.

7 **The Sigmoid Colon**—Dr. W. D. Kirkpatrick, Bellingham. Washington.

Abstract—

Surgical anatomy. Differential diagnosis of its surgical diseases. Report of a case of adhesions.

Discussion opened by Dr. G. M. Horton, Seattle, and Dr. H. M. Robertson, Victoria, B. C.

8 **Constipation and Resection of the Colon**—Dr. C. W. Sharples, Seattle, Washington.

Abstract—

Function of large bowel. Effects of retention of digestive refuse for abnormal periods. Aggravated cases of constipation. Resection of the colon therefor. Results.

Discussion opened by Dr. R. C. Coffey, Portland, Oregon, and Dr. C. L. Gritman, Moscow, Idaho.

9 **Observations on the Diagnosis and Treatment of Fractures**—Dr. L. H. Hamilton, Portland, Oregon.

Abstract—

Difficulty of securing accurate detail information from radiographs should prevent us from placing too much confidence in X-ray findings. Imperfect apposition tends to non-union, protracted convalescence and impaired function. Correct apposition assured by open method of treatment. Operation safe if rigid precautions are observed. Metal plates and screws preferable method of retaining fragments in position. Necessity for active movements early when injury is near joint.

Discussion opened by Dr. P. W. Willis, Seattle, Washington, and Dr. E. A. Rich, Tacoma, Washington.

10 **A Report of a Case of Gangrene of the Ischio-Rectal Fossae**—Dr. A. S. Monro, Vancouver, B. C.

Abstract—

History of case. Bacteriologic findings. Treatment. General considerations of the condition known as "noma."

Discussion opened by Dr. W. C. Cox, Everett, Washington, and Dr. H. H. McCarthy, Spokane, Washington.

11 **Resection of the Entire Sciatic Nerve. A Study of the Phenomena of Recovery and Regeneration After Neuroplasty**—Dr. K. A. J. Mackenzie, Portland, Oregon.

Abstract—

Rapidly growing and infiltrating central tumor of the sciatic nerve. Resection of nerve. Bridging of gap of 10¾ inches by flaps from the internal and external popliteal nerves. Recovery of locomotion. Study of motor and sensory regenerations. Exhibit of case.

Discussion opened by Dr. T. L. Catterson, Spokane, Washington, and Dr. J. R. Woodward, Payette, Idaho.

JULY 23, 1909, 9:30 A. M.—1:30 P. M.

Chairman, Dr. C. J. Fagan, Victoria, B. C.; Secretary, Dr. William House, Portland, Oregon.

12 **Treatment of Exophthalmic Goitre**—Dr. Andrew C. Smith, Portland, Oregon.

Abstract—

Early treatment necessary for satisfactory results. Medical and rest treatment produce nearly universal improvement, but recurrences the rule. X-ray exposures give good results; sera are still better. Surgery gives the best results. Thyroidectomy is best when conditions justify it. Ligation of superior thyroid artery safer in advanced Graves' disease. Radical operation not so dangerous as formerly considered. Report of cases.

Discussion opened by Dr. J. B. Eagleson, Seattle, Washington, and Dr. W. V. Gulick, Tacoma, Washington.

13 **Incidence of Echinococcus Disease in British Columbia**—Dr. R. E. McKechnie, Vancouver, B. C.

Abstract—

Paper intended to form the starting point for statistics on this subject in British Columbia. Statistics given showing prevalence, or otherwise, of this disease in British Columbia. Re port of cases. Deductions drawn from the cases enumerated as to source of origin.

Discussion opened by Dr. H. G. Lazelle, Seattle, Washington, and Dr. R. D. Wilson, Tacoma, Washington.

14 **Early Manifestations of Extra-Uterine Pregnancy**—Dr. W. D. Springer, Boise, Idaho.

Discussion opened by Dr. S. E. Josephi, Portland, Oregon, and Dr. A. A. Mathews, Spokane, Washington.

15 **Hysterectomy**—Dr. G. H. Coulthard, Idaho Falls, Idaho, and Dr. C. M. Cline, Idaho Falls, Idaho.

Discussion opened by Dr. H. P. Howard, Everett, Washington, and Dr. R. H. Ellis, Portland, Oregon.

16 **How Shall We Treat the Late Cases of Carcinoma of the Uterine Cervix?**—Dr. J. W. Bean, Tacoma, Washington.

Abstract—

Cancer of the cervix apparently on the increase. Radical surgery the only hope of cure. Review of pathology and mode of extension. Removal of uterus alone unscientific. Essentials of complete operation. Treatment of inoperable cases. Plea for more optimism on the part of the surgeon.

SECTION ON MEDICINE.

July 21, 1909, 9-30 A. M.—1:30 P. M.

Chairman, Dr. C. J. Fagan, Victoria, B. C.; Secretary, Dr. R. Eden Walker, New Westminster, B. C.

1 **Significance of Pain in Women**—Dr. W. Carlton Smith, Salem, Oregon.

Abstract—

The work of the surgeon and gynecologist of the last decade has laid bare the pathologic conditions which give rise to the aches and pains found so frequently among women.

There may be a disproportion between the subjective symptoms enumerated and the diseased area demonstrated. Seemingly unimportant lesions may produce a great amount of suffering or the opposite condition may obtain. Some of the common ailments to which women are subject and their characteristic symptoms.

By giving the neurotic element in women due consideration, and making allowance for its phenomena, certain subjective symptoms point more or less definitely to distinct pathologic lesions, hence the significance of pain as an aid to diagnosis.

Discussion opened by Dr. H. A. Castle, Pocatello, Idaho, and Dr. R. C. Boyle, Vancouver, B. C.

2 **Do Protozoa Infections Exist in British Columbia**—Dr. B. D. Gillies, Vancouver, B. C.

Abstract—

At the present time the general opinion is that these infections do not exist in British Columbia. Report of cases tending to show the presence of these infections. To definitely settle this question physicians are urged to send in to the laboratory at the Vancouver General Hospital blood smears in suspicious cases and not be satisfied with a diagnosis of atyphical typhoid or mountain fever. It is also desired that mosquitoes from the various interior districts be sent in in order that their variety may be determined.

Discussion opened by Dr. J. M. Holt, Astoria, Oregon, and Dr. S. J. Holmes, Seattle, Washington.

3 **Newer Conception Regarding the Action of the More Important Diuretics**—Dr. J. R. Brown, Tacoma, Washington.

Abstract—

The more important diuretics belong either to the purin or to the digitalis group of remedies. Theoretically diuresis is stimulated in three ways—by increasing the blood supply, by direct stimulation of the renal epithelium and by change in the osmotic condition of the blood plasma. Ludwig's theory of resorption. Fingerstedt's blood current meter.

Different actions of diuretics on healthy and on diseased persons explained. Practical deductions from this conception of the action of purins and the digitalis group. Combined administration of purin derivatives and diuretics of the digitalis group.

Discussion opened by Dr. C. J. Smith, Pendleton, Oregon, and Dr. T. M. Bridge, Idaho Falls, Idaho.

4 **Nephritis and Its Comparative Frequency Over the Pacific Northwest**—Dr. E. B. Pickel, Medford, Oregon.

Abstract—

True and false albuminuria. Physiologic and pathologic, also pathologic but non-renal, albuminuria. Importance of microorganisms and their toxins as etiologic factors. Other toxic agencies. Morbid anatomy—Cortical changes. Degenerative changes in the blood vessels, epithelium, etc. Various types of nephritis and their differentiation. Statistics showing the general importance of nephritis, and its frequency in the Northwest.

Discussion opened by Dr. J. M. Pearson, Vancouver. B. C., and Dr. W. A. Shannon, Seattle, Washington.

5 **Early Diagnosis of Chronic Nephritis**—Dr. N. M. Baker, Spokane, Washington.

Discussion opened by Dr. J. F. Bell, Portland, Oregon, and Dr. J. M. Taylor, Boise, Idaho.

JULY 22, 1909, 9:30 A. M.—1:30 P. M.

Chairman, Dr. W. H. Byrd, Salem, Oregon; Secretary, Dr. R. Eden Walker, New Westminster, B. C.

Abstract—

The care and treatment of the insane by the state are primarily questions of efficiency and economy. Efficiency relates to the speedy recovery, comfort and well-being of the patients, the mitigation of the distress of relatives and friends, a proper regard for the asylum worker, the general satisfaction of the public and the progress of knowledge of pathology, etiology, treatment and prevention of insanity.

The asylum unit is determined by the number of physicians, nurses, cooks and other factors necessary to properly conduct an asylum.

When the number of patients increases beyond the unit of such service, duplication and reduplication become necessary. Would not efficiency, especially early treatment, be promoted if such duplication was had by establishing small asylums in different parts of the state? Shelter, food, clothing and attendance, the principal items of expense, are necessary for each patient and, except to a very limited extent, cannot be shared.

Should not the government method of selecting medical officers for the army, navy and marine hospital service be adopted by the state in selecting its physicians?

The relative increase of the insane population and its cause.

The application of the facts of scientific dietetics, rational employment and exercise with regular hours for sleep are the elements of successful treatment in most cases of insanity.

Discussion opened by Dr. L. F. Griffith, Salem, Oregon, and Dr. J. M. Semple, Medical Lake, Washington.

7 **Epileploid Conditions**—Dr. W. T. Williamson, Portland, Oregon.

Abstract—

Dreams, night terrors, somnambulism, nystagmus, syncope, vertigo and migraine.

Discussion opened by Dr. D. A. Nicholson, Seattle, Washington, and Dr. C. E. Doherty, New Westminster, B. C.

8 **Alcohol—Its Uses in Health and Disease**—Dr. A. P. Proctor, Vancouver, B. C.

Abstract—

The physiologic action of alcohol on the heart and circulation, nervous system and metabolism. Its place in therapeutics. Its effect on the organism in health and disease.

Discussion opened by Dr. W. W. Potter, Spokane, Washington, and Dr. E. P. Geary, Portland, Oregon.

9 **Flexner's Anti-Meningitis Serum**—Dr. P. V. von Phul, Seattle, Wash., and Dr. G. B. McCulloch, Seattle, Wash.

Abstract—

A resume of the literature on this subject. Present status of the anti-meningitis serum. Diagnostic points and peculiarities of cerebrospinal meningitis. Results obtained by using this serum in the United States and, particularly, in Seattle. Dosage and frequency of administration.

Discussion opened by Dr. Alvin Baird, Portland, Oregon, and Dr. G. S. Hicks, Tacoma, Washington.

10 **Symptoms and Diagnosis of Appendicitis**—Dr. T. O. Boyd, Twin Falls, Idaho.

Discussion opened by Dr. H. W. Howard, Prosser, Washington, and Dr. A. F. Sether, Roseburg, Oregon.

JULY 23, 1909, 9:30 A. M.—1:30 P. M.

Chairman, Dr. J. L. Stewart, Boise, Idaho; Secretary, Dr. Eden Walker, New Westminster, B. C.

11 **Typhoid Fever—Its Management and Specific Treatment**—Dr. M. M. Harshbarger, St. Anthony, Idaho.

Discussion opened by Dr. H. W. Dewey, Tacoma, Washington, and Dr. J. M. Short, Gresham, Oregon.

12 **Treatment of Fever**—Dr. C. N. Suttner, Walla Walla, Washington.

Abstract—

Etologic basis of fever. Fever as one expression of a symptom complex. Its significance in infective diseases. The question of deleteriousness or beneficence of hyper-pyrexia. Medical and hypertherapeutic anti-pyresis. Illustrative cases .

13 **The Stokes-Adams Syndrome—Report of a Case**—Dr. J. F. Scott, North Yakima, Washington.

Abstract—

Resume of pathology and symptoms—bradycardia, cerebral symptoms, Cheyne-Stokes respiration and accompanying uremia.

Discussion opened by Dr. William House, Portland, Oregon, and Dr. W. C. Keyes, Bellingham, Washsington.

14 **Early Diagnosis of Pulmonary Tuberculosis by Means of the Roentgen Ray**—Dr. H. Rundle Nelson, Victoria, B. C.

Abstract—

The screen and skiagraphic methods. Bearing on progress and record of same. Illustrative cases.

Discussion opened by Dr. C. H. Thomson, Seattle, Washington, and Dr. H. Power, Spokane, Washington.

15 **The Complement Binding Test in Syphilis**—Dr. Ralph Matson, Portland, Oregon.

Abstract—

A consideration of the different classes of antibodies and their relationship to the test. The principles of hemolysis. Its application to the test. The technic for preparing the materials and carrying out the test. Its application in various branches of medicine and surgery. Sources of error.

Conclusion—The rarity of a positive reaction in normal serum and the high precentage of positives in syphilis or in suspected cases shows that the reaction is of great value. A positive reaction is found in greatest frequency in early cases. Antisyphilitic treatment if effective sometimes causes the reaction to disappear.

Discussion opened by Dr. A. P. Lensman, Seattle, Washington, and Dr. A. E. MacKay, Portland, Oregon.

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY.

July 21, 1909, 9:30 A. M.—1:30 P. M.

Chairman, Dr. J. A. MacKinnon, Seattle, Wash.; Secretary, Dr. R. L. Nourse, Boise, Idaho.

1 **The Septum Nasi. Its Strategic Position and Its Baneful Influence on the Eyes and Ears When Deviated. Submucous Resection**—Dr. F. W. Hilscher, Spokane, Washington.

Abstract—

Rebellious casts of headaches, eye pains, accommodation asthenopia, neuroritinitis, conjunctivitis, etc., may be caused by pressure contact between a middle turbinate and the septum—surprising extent of reflex irritation resulting therefrom and its far-reaching effect not alone on local, but on general health. Similarity of reflex troubles from pressure contact to those arising from errors of refraction—differential diagnosis.

Observations on sneezing, foreign body in nostril and artificial catarrh —chronic varieties dependent on much the same conditions, i. e., malformation rather than constitutional dyscrasia.

Treatment: Restoration of physiologic form by intelligent surgical intervention. Submucous resection, especially of nasal septum. Technic. New instruments. Illustrative cases.

Discussion opened by Dr. R. W. Perry, Seattle, Washington.

2 **Ophthalmoplegic Migraine Involving the Abducens Nerve**—Dr. C. A. Veasey, Spokane, Washington.

Abstract—

Most of the cases of Ophthalmoplegic Migraine that have been recorded have shown involvement of the muscles supplied by the oculo-motor nerve. In a few instances other nerves have been effected, and among them have been cases in which the abducens was involved. Report of cases with discussion of the symptoms, diagnosis and treatment of the condition.

Discussion opened by Dr. J. F. Dickson, Portland, Oregon.

3 **Phlegmonous Inflammation of the Lid Resembling Parinaud's Conjunctivitis, with Report of Cases**—Dr. N. H. Goodenow, North Yakima, Wash.

Discussion opened by Dr. E. B. Burwell, Seattle, Washington.

4 **Nystagmus in Relation to the Physiology and Pathology of the Internal Ear**—Dr. Robert L. Nourse, Boise, Idaho.

Abstract—

Anatomy and physiology of the semicircular canals briefly considered. Methods of producing physiologic nystagmus by rotary movements of the body, etc. Nystagmus frequently a symptom of great value in determining the presence of inflammation or suppuration of the internal ear. Recent investigations in this field by Vienna observers.

Discussion opened by Dr. A. E. Burns, Seattle, Washington.

5 **Penetrating Wounds of the Eyeball**—Dr. P. B. Wing, Tacoma, Washington.

Abstract—

Penetrating wounds of sclera, of cornea and of cornea and lens. Foreign bodies in vitreous, lens and aqueous. Diagnosis and treatment.

Discussion opened by Dr. W. K. Seelye, Seattle, Washington.

JULY 22, 1909, 9:30 A. M.—1:30 P. M.

Chairman, Dr. A. G. Greenstreet, Seattle, Wash.; Secretary, Dr. R. L. Nourse, Boise, Idaho.

6 **Expression of Cataract in the Capsule, with a Report of Fifty Cases**—Dr. H. V. Würdemann, Seattle, Washington.

Abstract—

History and description of operation. Advantages—an immediate clear pupil, absence of iritis, few dressings necessary and a higher percentage of good results. Disadvantages purely due to want of skill and poor technic of operator.

With the exception of cases where the lens capsule has been injured by traumatism most forms of cataract may be operated upon by this method. It is particularly adapted for immature cataracts, as thereby a long course of waiting is obviated until the cataracts become mature and safe for extraction by the capsulotomy method.

Report of fifty cases recently operated on by the author with exhibition of specimens.

Discussion opened by Dr. Frederick Bentley, Seattle, Washington, and Dr. N. D. Pontius, Seattle, Washington.

7 **Blindness Following Hemorrhage**—Dr. Hamilton Stillson, Seattle, Washington.

Abstract—

Blindness sometimes follows systemic loss of blood. From a medicolegal point of view this fact is of great importance. After accident attended by loss of blood the eyes should be examined as to their field, acuity, light and color sense, pupillary reaction, etc.

Perhaps the first symptom to be complained of is a burning sensation in the back of the eye, then pain in and around the eye, with photophobia, dimness of acuity, shimmering of objects and then more or less complete loss of function. This blindness may come on at once and be complete and permanent, or it may not begin for several days and be only partial and temporary.

Report of cases.

Discussion opened by Dr. David DeBeck, Seattle, Washington.

8 **Treatment of Corneal Ulcers by Suction Hypermia**—Dr. A. W. Hawley, Seattle, Wash., and Dr. C. T. Cooke, Seattle, Wash.

Abstract—

Normal nutrition of the cornea. Solution of continuity of corneal epithelium alone not sufficient to cause ulcer. Reproduction over abrasion takes place rapidly against great obstacles. Diminished resistance of substantia propria an essential factor.

Indicatons for treatment: Sterilization of lesion, elevation of resistance of substantia propria and prevention of reinfection. Suction, by promoting flow of normal plasma into and through lesion and by supplying place of dead phagocytes with fresh host of leuococytes, valuable adjunct. Antibodies in fluids thus supplied of value. Action of atropin advisable in case of involvement of uveal tract to quiet nervous mechanism.

Report of cases.

Discussion opened by Dr. A. G. Greenstreet, Seattle, Washington.

9 **Extirpation of the Lachrymal Sac**—Dr. I. Glen Campbell, Vancouver, B. C.

Abstract—

The different methods with especial reference to that of Miller of Vienna. This after treatment and the causes of failure.

Discussion opened by Dr. J. A. MacKinnon, Seattle, Washington.

10 **Tonsillotomy and Tonsillectomy**—Dr. J. A. M. Hemmeon, Seattle, Washington.

Abstract—

Indication for each operation. Methods. Tonsillotomy to be preferred in children and young adults, preferably by guillotine. Tonsillectomy preferred in adults, preferably by forceps, knife or scissors. Other methods such as by snare or enuclation by finger or instruments. Objection to tonsillectomy—in certain cases of voice users, as vocalists. Local anesthesia preferred in tonsillectomy—general anesthesia in tonsillotomy in young children.

Discussion opened by Dr. C. Benson Wood, Seattle, Washington.

UROLOGICAL SECTION.

July 23, 1909, 9:30 A. M.—1:30 P. M.

Chairman, Dr. Geo. S. Whiteside, Portland, Oregon; Secretary, Dr. L. H. Redon, Seattle, Wash.

1 **Malignant Diseases of the Bladder, with Report of Cases**—Dr. Granville MacGowan, Los Angeles, Calif.

Discussion opened by Dr. A. E. MacKay, Portland, Oregon.

2 **Intravesical Operations by Means of a Cystoscope**—Dr. Henry Meyer, San Francisco, Calif.

Abstract—

Points in asepsis. Technic governed by the pathologic condition to be operated upon. Character of pathologic conditions in which cystoscopic operations are indicated.

Discussion opened by Dr. A. H. Peacock, Seattle, Washington.

3 **Observations on the Treatment of Epididymitis**—Dr. J. Gibbs, Vancouver, B. C.

Abstract—

Discussion of the treatment of the infective forms of epididymitis—those caused by gonococci, staphlococci and tubercle bacilli. The part played by reverse peristalsis and intra-abdominal pressure in the distribution of infection.

A brief sketch of the structure and function of the epididymis and vas. Minute and gross pathology.

Treatment: Preventive treatment based upon the cause of extension of the infection along the cord. Medical treatment. Its principles, results and weak points. Surgical treatment: General description, technic and results.

Discussion opened by Dr. A. P. Lensman, Seattle, Washington.

4 **Pathology of Bladder Tumors**—Dr. R. V. Dolby, Vancouver, B. C.

Abstract—

Discussion of tumors of the bladder with especial relation to villous tumors and endotheliomata in general, and also with reference to the endogenous and exogenous forms of carcinoma. Brief description of secondary effects on the kidneys and ureters.

Discussion opened by Dr. W. S. Griswold, Seattle, Washington.

5 **Tuberculosis of the Kidney, with Especial Reference to Diagnosis and Treatment**—Dr. G. Sherman Peterkin, Seattle, Wash.

Abstract—

Brief history as to etiology and diagnosis to show rapid advancement from makeshift to definite means of diagnosis. Frequency of the disease. Has no classic course of symptoms—when they become so the condition is usually too far advanced to permit of efficient treatment. Successful treatment signifies early diagnosis. Means of making early diagnosis; value of subjective symptoms in making the same; relative value of the cystoscope, microscope and tuberculin. Medical and surgical treatment. Indications for treatment and comparative value of medical and surgical treatment.

Discussion opened by Dr. L. W. Hyde, Portland, Oregon.

6 **Some Conditions Simulating Malignant Disease of the Bladder**—Dr. George S. Whiteside, Portland, Oregon.

Abstract—

Early diagnosis of vesicle tumors of utmost importance; therefore such conditions as syphilis, bullous edema, stone, tubercle, prostatic hypertrophy and deformities or malformations of the bladder must be certainly differentiated from neoplasms. Signs, symptoms and methods of examination.

Reports of cases.

Discussion opened by Dr. F. W. Rinkenberger, Tacoma, Washington.

GENERAL SESSION ON TUBERCULOSIS.

Under Auspices of the Washington Association for the Prevention and Relief of Tuberculosis.

(Open to the Public)

July 22, 1909, 2:30 P. M.

General Assembly Hall.

Chairman, Dr. C. A. Smith, Seattle, Washington, President of the

Association; Secretary, Dr. E. E. Heg, Seattle, Washington.

1 **A Layman's View of the Tuberculosis Problem**—Mr. A. L. Mills, Portland, Oregon, President Portland Open Air Sanitorium.

2 **The Diagnosis of Tuberculosis by Other Than Pulmonary Symptoms**—Dr. James B. Herrick, Chicago, Ill., Professor of Medicine, Rush Medical College.

3 **Prophylaxis of Tuberculosis**—Dr. E. A. Pierce, Portland, Oregon, Physician to Portland Open Air Sanitorium.

4 **Stereopticon Views Views Illustrating Some Features of the Antituberculosis Campaign**—Dr. E. E. Kelly, Seattle, Washington.

GENERAL SESSION ON PUBLIC HEALTH AND SANITATION.

Under Auspices of the Pacific Coast Public Health Association.
(Open to the Public)
July 22, 1909, 8 P. M.

Chairman, N. K. Foster, Sacramento, Calif., President of the Association; Secretary, Dr. E. E. Heg, Seattle, Washington.

1 **Health Matters as Taught and as They Should Be Taught in Our Public Schools**—Dr. C. J. Fagan, Victoria, B. C., Secretary British Columbia Provincial Board of Health.

2 **Inspection of Foods**—Dr. S. B. Nelson, Pullman, Washington, Professor of Veterinary Science, Washington State College.

3 **How Can We Get Clean Milk for Our Cities?**—Mr. L. W. Hanson, Seattle, Washington, State Dairy Instructor.

4 **Quarantine**—Dr. Wilson Johnston, Spokane, Washington, President Washington State Board of Health.

5 **Steropticon Views Illustrating Public Health and Sanitation**—Dr. E. E. Heg, Seattle, Washington, Secretary Washington State Board of Health.

CORRESPONDENCE.

THE ATLANTIC CITY MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

To the Editor:

According to your request, I submit the following for the readers of Northwest Medicine,

The sixteenth annual session of the A. M. A., with its 12 sections and such other scientific societies as the American Academy, the Medical Editors, the Urological and other associations, met in Atlantic City, with a registration of about 3,200, of whom four were from the State of Washington, being Drs. Peterkin, Kelley and Wurdemann, of Seattle, and Cunningham, of Spokane, Dr. Peterkin acting as our representative in the House of Delegates.

The 7,000 miles of railroading from the Pacific to the Atlantic and back again, five days each way on the train and very considerable expense makes representation from the Puget Sound country practically prohibitive to the average practitioner of medicine, yet it would pay any physician to attend, even at this sacrifice. Not only do we hear valuable essays at first hand, but meet the authors and principal men of our profession, finding our ideals amply sustained in most instances. At Atlantic City, "America's greatest pleasure and health resort," on the board walk, at the meeting place and in the foyers of the thousand hotels are to be found for these few days the elite of the American medical profession.

For the fourth time we met here and, despite our western preferences, it is to be hoped that the policy of convening at Atlantic City every other year will be pursued. There is no city in all America that has sufficient hotels and halls for our now gigantic association, where everyone with his wife and family can find such first-class accommodations at moderate cost and be subjected to none of the inconveniences that obtain in other cities, whose hotels are usually taxed to their utmost with the ordinary run of commercial business.

It is of interest to know that this magnificent resort was due to the inspiraion of one of our own profession, Dr. Jonathan Pitney, of Absecon, who back in the '40s "saw with prophetic vision its possibilities and preached the evangel of this island of health." "Blessed with a climate of rare equability, 61 per cent. sunshine (though it rained every day of our stay) and an annual temperature of 52°," tempered by sea breezes from the fierce sun of summer and warmed by the Gulf Stream in winter, with good water and all the conveniences of modern luxurious living, it is an ideal health and pleasure resort, its popularity being largely due to the backing of the medical profession, of whom there are many well-known permanent residents.

The program this year is fascinating and the addresses most instructive. Changes are noted in the orations on medicine, surgery and state medicine, which are not now delivered in the evenings, but before the sections, which insures a full attendance and allows of the evenings for recreation, which was amply furnished by the local committee of entertainment. The scientific exhibit this year offered medals and diplomas of honor. The subject of tuberculosis is especially well presented. The commercial exhibits are most complete, giving exposition of instruments, apparatus, remedial agents, literature and supplies. The social events for the evenings took up the time profitably in meeting old friends and making new ones.

As the raison d'etre for the convention is the scientific contributions, all of which are given before the sections and which will only appear in print after months, in the Journal of the American Medical Association, I took special pains this year to visit the various sections and find out the best of their programs and have selected the following as being the cream of the convention, and of special interest to tbe readers of NORTHWEST MEDICINE:

In the Section of Surgery and Anatomy, "Address on Thoracic Surgery," Professor P. L. Friedrich, Marburg, Germany.

In the Section of Obstetrics and Disease of Women, Chairman's Address: "Mental Alienation in Women and Abdomino-Pelvic Disease," Walter P. Manton, Detroit.

In the Section on Practice of Medicine, "The Symposium of Physical Therapeutics" was of marked interest, especially the paper on "The Value of Baths and Exercises in the Treatment of Heart Disease," Robert H. Babcock, Chicago. Discussion by Frank E. Brown, Baltimore. "The Value of Physical Training," Henry B. Favill, Chicago.

In the Section on Hygiene and Sanitary Science, the following were of special value:

"The Economic Value of Protecting the Water-Supplies," Harold B. Wood, Philadelphia.

"Lake Michigan Water for Drinking Purposes," W. A. Evans, Chicago.

"The Peculiar and Interesting Course of the Currents at the Easterly End of Lake Erie, and Their Influence on the Sanitation of Buffalo," George Edward Fell, Buffalo, N. Y.

In the Section on Practice of Children was noted the paper on:

"The Present Status of the Serum Treatment of Epidemic Cerebrospinal Meningitis," Simon Flexner, New York.

A consideration of the basis of the present serum treatment of epidemic cerebrospinal meningitis. A compilation of more than five hundred cases of the disease, diagnosed bacteriologically and treated with the serum, will be presented, and the criteria of the action of the serum discussed. It is believed that the evidence now at hand shows that the serum is of undoubted value as a therapeutic agent for the treatment of the disease, the course of which is shortened, complications diminished and the mortality reduced.

Discussion by T. M. Rotch, Boston.

In the Section on Diseases of Children a similar subject was discussed:

"The Treatment of Epidemic Meningitis with the Flexner Serum," Frank Spooner Churchill, Chicago.

General considerations. Review of the literature with reports of cases treated up to date, including cases studied by the author. Result: A great reduction in the mortality and in disastrous sequelae. Method or administering the serum; dosage, necessity of administering intradurally in order to get the best results. Development of the Flexner serum makes it obligatory always to do a lumbar puncture in cases presenting the clinical signs of meningitis, as by this method alone can the type of the meningitis be determined, and thus proper treatment be instituted promptly and efficiently.

And in the same section the following was of marked interest:

"The Treatment with Living Lactic Acid Bacilli of Summer Diarrheas Due to Intestinal Fermentation," Charles Hunter Dunn, Boston.

In the Section on Laryngology and Otology, the symposium on faucial tonsils was of great import:

"Anatomic and Physiologic Considerations Relating to the Faucial Tonsils," C. M. Robertson, Chicago.

"Conditions in the Faucial Tonsils with Call for Operative Interference," Emil Mayer, New York.

"A Discussion of the Methods of Operating on the Faucial Tonsils," Norval H. Pierce, Chicago.

"General Anesthesia for Tonsil Adenoid Operations," Francis R. Packard, Philadelphia.

"Postoperative Tonsillar Bleeding. Its Surgical Control, with Mention of Cases," Lee Cohen, Baltimore.

Discussion on Tonsil Operations by Frank C. Todd, Minneapolis; Chevalier Jackson, Pittsburg, and F. Gurney Stubbs, Chicago.

In the Section on Pathology and Physiology were the following:

"A Rational and Practical Complement Fixation Test and the Butyric Acid Test for Syphilis Diagnosis," Hideyo Noguchi, New York.

"Some Studies of the Precipitin Tests for Syphils," Henry S. Wieder and Edward M. l'Engle, Philadelphia.

"Serodiagnosis of Syphilis," William Litterer, Nashville, Tenn.

In the Section on Nervous and Mental Diseases was a symposium: the serodiagnosis of syphilis and its relation to diseases of the nervous system, including these valuable papers:

"Value of Serodiagnostic Methods in the Diagnosis of Diseases of the Central Nervous System," B. Sachs, New York.

"The Practical Value of Lymphocytosis and the Globulin Reaction and the Complement Finding Reaction for Neurology," Max Nonne, Hamburg, Germany.

"The Wassermann Reaction," E. Castelli, New York.

"A Sidelight on the Syphilitic Etiology of Tabes," James J. Putnam, Boston.

In the Section on Ophthalmology, the two subjects of cataract and cerebral decompression were particularly well presented and, being recent advances in ophthalmic science, were most fully discussed.

"The Expression of Cataract in Its Capsule, with Report of 40 Operations," H. V. Würdemann, Seattle, Wash.

Th expression operation is one of selection, not of choice; should be done only by most skilful operators; danger of loss of vitreous to be guarded against by selection of case and by use of modified Kalt suture. Results of operation in my hands same as ordinary cataract extraction. Result as to visual acuity—better. Indications for operation and modifications of methods.

Discussion by Peter Callan, New York.

"Expression of Cataracts in the Capsule by the Smith Method," D. W. Greene, Dayton, O.

Extraction within capusule the ideal operation. Age has considerable influence in determining results. Cases should be selected with refence to the condition of vitreous. No question as to danger if amount is greater than this. Smith thinks operation will prove to be best and safest one for immature cataracts at any age. Men may differ as to its choise for mature senile cataracts, but elimination of capsule is so desirable that I favor operation, other things being equal. Future of this operation will depend on how well cases will compare in healing, visual results, and late complications, with patients operated on after regular methods. Postoperative complications are fewer but cosmetic appearance of eyes do not average so well. In 31 of these patients between 60 and 87 years of age, vision equalled 20/20 or better.

Discussion by Arnold Knapp, New York City.

"Operative Treatment of Papilledema Dependent on Increased Intracranial Tension," George E. de Schweinitz, Philadlphia.

Introduction and historical data. Analysis of 212 operations. Ophthalmoscopic appearance of the nerve head indicating operative interference. Date of the occurrence of these changes. Vision of eyes with choked disc and its relation to the time of operative procedure. Effect of the operation when vision is very poor and the choked disc has passed beyond the third stage prior to operation. Preservation of light perception. Apparent effects of operation in hastening the loss of vision. Complications and disappointments. Increase in papilledema and visual disturbance following decomposition. Hemorrhage in and around the disc or in distant portions of the retina. Other effects. Practical points connected with this subject. Date of subsidence of swollen disc; indications which disc gives of size and situation of growth, whether on right or left side of the brain, or cerebellum; delay in optic disc changes; therapeutic considerations. Conclusions.

Discussion by James Bordley, Jr., Baltimore.

"Surgical Aspects of Cerebral Decompression," Charles H. Frazier, Philadelphia.

Discussion by Harvey Cushing, Baltimore.

The next meeting will be held in St. Louis, Mo., June, 1910.

Atlantic City, N. J., June 11, 1909. H. V. Würdemann.

REPORTS OF SOCIETY MEETINGS.

KITTITAS COUNTY MEDICAL SOCIETY.

President, H. J. Felch, M. D.; Secretary, G. M. Steele, M. D.

The annual meeting of the Kittitas County Medical Society was held at Ellensburg, June 19. The following officers were elected for the ensuing year: President, C. L. Hoeffler, Ellensburg; vice-president. D. O. Kearby, Cle Elum; secretary and treasurer, G. M. Steele, Ellensburg. For the meeting of the State Medical Association, E. W. Stimpson, Roslyn, was elected delegate, and C. L. Hoeffler, Ellensburg, alternate.

SPOKANE COUNTY MEDICAL SOCIETY.

President, H. H. McCarthy, M. D.; Secretary, S. E. Lambert, M. D.

The regular meeting of the Spokane County Medical Society was held at Spokane, Wash., June 3.

Some Legal Aspects of the Relation Betewen Physician and Patient. Mr. Sam Edelstein, a local attorney, read this paper. The points of interest were taken from cases which had actually been decided. At the conclusion of his paper a vote of thanks was tendered the author.

Dr. Kimball desired information concerning the liability of a physician who signs commitment papers for a supposedly insane person. Dr. Semple called attention to the fact that the physician, and not the judge who signs, is liable for illegal commitment. He related a case where the physician did sign the paper without thorough examination of the patient, relying too much on the testimony of interested friends. He was held liable and fined one thousand pounds sterling. Judges in this state have informed Dr. S. that the same law holds true here.

Prognosis of Cardiac Diseases. Dr. M. C. Robins read this paper, referring more particularly to those diseases of the endocardium. It was discussed by Dr. Grieve, who requested that the paper be published in the official organ of the state association. Dr. J. G. Matthews asked if the author meant to say that digitalis should be used in dilatation and aortic regurgitation. Dr. Robins replied, "Yes. Would always use it under such conditions."

Major W. A. M. Shockley, Medical Department, U. S. A., spoke of the need of the Medical Corps for candidates and the advantages of the service for the young graduate in medicine, thinking the present an opportune time for entrance in the service.

Dr. Wilson Johnston offered the following resolution:

"Resolved, That, until such time as the cause of scarlet fever is definitely known, it is the sense of the Spokane County Medical

Society that the quarantine period should be not less than six weeks; that all adult contacts be quarantined for ten days and all contacts under eighteen years of age be quarantined twenty days." This resolution precipitated a very lively discussion pro and con and was finally withdrawn in favor of the following, offered by Dr. J. R. Neely: "Resolved, That the Spokane County Medical Society indorse fully the actions of the City Board of Health in the present campaign against scarlet fever."

BOOK REVIEWS.

Edited by
KENELM WINSLOW, M. D.

Practical Medicine Series, Vol. I., General Medicine. Comprising ten volumes on the year's progress. Edited in general by Gustavus P. Head, M. D. Edited by Frank Billings, M. S., M. D., and J. H. Salisbury, A. M., M. D. Series 1909. Cloth. 403 pp. $1.50. Year Book Publishers, 40 Dearborn Street, Chicago.

This is an unusually interesting number of this well-known and valuable publication. The first part of the volume is given up to an admirable abstract on progress in tuberculosis by Billings, and this includes all the proceedings of the late International Tuberculosis Congress of 1908. Woodbury brought out the fact that bad teeth were common in tuberculous persons and that such—through infection and interference with chewing and digestion—had lowered resistance and were therefore more susceptible to the diesase. Conversely, care of the teeth constitutes a prophylactic agency of value. The paper of Paschall, of Seattle, at the International Congress, is also reviewed by Billings and the subject of the association of bad teeth with tuberculosis was discussed by him in a much more thorough and radical manner than that of Woodbury. Space does not permit of further review, but it may be said that there are no works on medicine of more value than those on progress, and this volume is unsurpassed in the judgment shown in abstracting concisely.

WINSLOW.

Conservative Gynecology and Electro Therapeutics. A Practical Treatis on the Diseases of Women and Their Treatment by Electricty. By G. Betton Massey, M. D., Attending Surgeon to the American Oncologic Hospital, Philadelphia, Fellow and ex-President of the American Electro-Therapeutic Association; Member of the American Medical Association, etc. Sixth edition, thoroughly revised. Royal octavo. 462 pp. Illustrated with 12 original, full-page chromolithographic plates and 15 full-page halftone plates of photographs taken from nature, and numerous engravings in the text. Bound in extra cloth. Price, $4.00, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

It is unnecessary to review a work in extenso which has reached its sixth edition. In the present volume the new matter consists chiefly of the chapter on The Principles of Electro-Chemical Surgery in the removal of new growths, the treatment of tuberculous adenitis by zinc-mercury ions and the use of high-frequency, high potential currents in gynecology. The main criticism which the reviewer would make is that the author does not limit the use of electricty in gynecologic therapeutics within sufficiently narrow limits but soars without let or hindrance into all realms of gynecology with the electric panacea. It is, however, the best book on the details of electric treatment in this subject and, with the exceptions noted, is to be commened.

O'Shea.

Essentials of Bacteriology. By M. V. Ball, M. D., formerly Instructor in Bacteriology at the Philadelphia Polyclinic. Sixth edition, thoroughly revised. 12 mo. volume of 290 pp., with 135 illustrations, some in colors. W. B. Saunders Company, 1908. Cloth, $1.00 net. Philadelphia and London.

Ball reviews the subject of bacteriology in a concise manner, covering in a few words the essentials in this ever-broadening field. Nearly every new subject of importance has been touched upon in the last revision but, as in other books of a like n ature, too much of the text is misleading, since it is impossible to tell in a few words important scientific discoveries which take many chapters in the original descriptions. Ball tells us that "Trudeau uses tuberculin by beginning in afebrile cases with 1/1000 mg. B. E. or B. F., increasing 1 decigram every three days until 1 cc. can be injected without causing any reaction." Poor Trudeau, or rather, poor patient! Such matters should not be discussed at all or sufficient space devoted to make the matter clear. In the chapter on immunity the statements are even more misleading, due to the author's failure to recognize the chemical nature of bacterial products. The classification of bacteria at the end of the book affords an excellent working table for the laboratory.

Paschall.

The Practical Medicine Series, Vol. II. General Surgery. Edited by John B. Murphy, A. M., M. D., LL. D. Series, 1909. Cloth, 617 pp. $2.00. Illustrated. Year Book Publishers, 40 Dearborn Street, Chicago.

In this book we find a splendid review of the recent advances in surgery by a master. Perhaps the 50 pages on peritonitis constitute the most complete abstract and serve to vindicate the marvelously successful treatment of which Murphy is the originator. The surgery of the West is well represented, for, among the more extensive notices of progress, are articles by W. J. Mayo, on surgery of the stomach; and of C. H. Mayo, on thyroidectomy and transperitoneal removal of tumors of the bladder; and of Judd, of 1,652 cases of inguinal hernia operated upon by the simple method in vogue at Rochester, Minn. The cure of pulmonary embolism by actual surgical invasion of the chest and removal of the clot is one of the startling innovations of surgery inaugurated by Trendelenburg. This volume will prove of the greatest interest and value to all who do surgical work and the frequent contributions of its editor, couched in his clear and positive style, add greatly to its worth.

Winslow.

The International Medical Annual. A Year Book of Treatment and Practitioners' Index. Cloth. 651 pp. Illustrated with photographic and colored plates. Twenty-seventh year. 1909. Price $3.50. E. B. Treat & Co., New York.

It is impossible to review such an immense amount of material, itself a review of medical progress, but the reviewer has the greatest respect for this kind of literature. In the present volume there is, however, a single article on a page not numbered. but interleaved between pages 642 and 643, which is an absolutely reprehensible and wholly blameable insertion and one which the publishers will have cause to regret.. There is nothing to indicate that this page differs from any other in the volue in any way whatever, except that it is unnumbered. The title of the article is "Treatment by Hyperemia," and, after preliminary remarks about Bier's treatment, etc., it turns out the final word on the subject is antiphlogistine and the whole page is practically given to extolling this proprietary article through the pen of a Prof. Lubbert. Otherwise the publication resembles its predecessors, except by its increased girth and capacity for holding more valuable and useful pabulum. WINSLOW.

Text-Book of Embryology. By Frederick Randolph Bailey, A. M., M. D., Adjunct Professor of Histology and Embryology, College of Physicians and Surgeons (Medical Department of Columbia University), and Adam Marion Miller, A. M., Instructor in Histology and Embryology, College of Physicians and Surgeons, New York. 672 pp. Royal octavo, with 515 illustrations. Published by William Wood & Co., New York. Price, $4.50.

This book is well written and well illustrated. The scope of the work is the development of the human embryo, with just enough refeence to other forms forms to make the processes of the human embryo intelligible. It is, therefore, particularly suited to the needs of medical students. The authors show many reconstructions from sections, giving a much clearer conception of the development of the various organs than can be gotten from a simple description. The practical suggestions at the end of each chapter will be helpful for laboratory work. The development of the germ layers has been treated rather elaborately from a comparative standpoint, and the chapter on the nervous system gives a general conception of the subject. In the second part (Organogenesis), at the end of each chapter, is given a brief description of development anomalies and malformations which may occur in connection with the organs described in the chapter, thus making it useful for the practitioner as a reference book. SIMPSON.

International Clinics.. By Leading Members of the Medical Profession Throughout the World. Vol. 1. Nineteenth Series. 1909. Phila. and London, J. B. Lippincott Co. $2.00.

This is an unusually interesting number of the well known publica- medicine, surgery, gynecology, obstetrics, genito-urinary diseases, tion. There are articles under the following headings: treatment, proctology rhinology, dermatology and pathology. Among these of great practical value are the monographs: Occupations and So-called Rheumatism Pains, by Walsh; Conditions Modifying Operative Work, by Willmoth; Absorption from the Peritoneal Cavity, by W. G. MacCallum, and many others which would perhaps be even more likely to appeal to the different tastes of other medical men. Then, under Progress of Medicine During 1908, will be found sections on treatment, by Stevens; on medicine, by Edsall and Nisbett; and on surgery, by Bloodgood. These sections alone easily make the book worth while. tility in the stomach. To prevent anaphylaxis, in those who have previously received antidiphtheric serum and again require it, it is recommended that but ½ cc. shall be given, to test any especial sensitiveness of the patient, and particular pains be taken to see that the needle shall not have entered a vein. WINSLOW.

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